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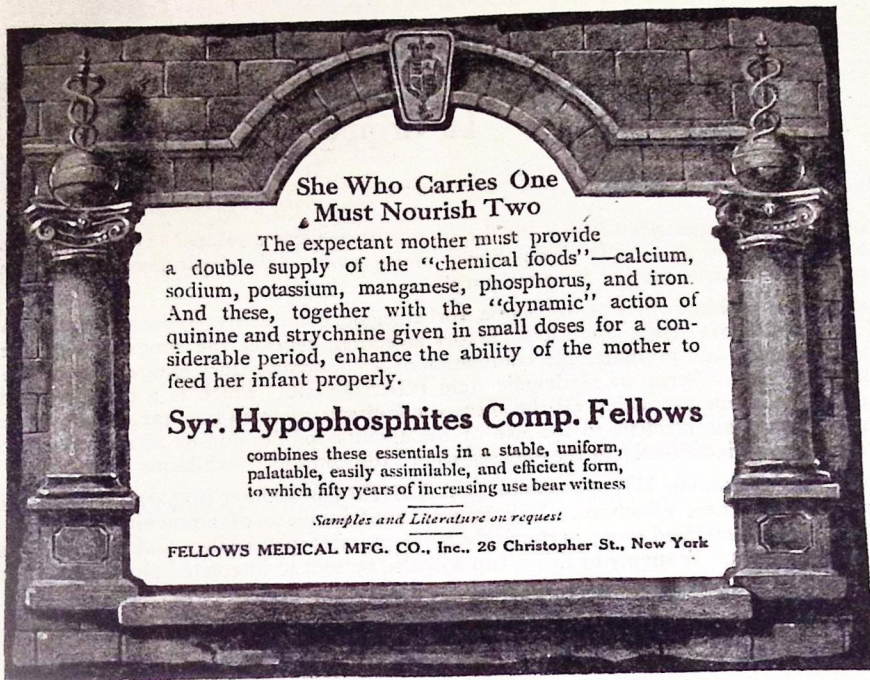
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SOUTHERN MEDICAL ASSOCIATION.

Annual Meeting at Asheville, N. C., November 10-13, 1919.
SHALB HARRIS, M.D., Sec., LAWRENCE F. BARKER, M.D., Pres.,
Birmingham, Ala. Baltimore, Md.

WESTERN SURGICAL ASSOCIATION

Annual Meeting at Kansas City, Mo., Dec., 1919.
ARTHUR T. MANN, M.D., Sec., ROLAND HILL, M.D., Pres.,
Donaldson Bldg., Minneapolis, Minn. St. Louis, Mo.

CANADIAN MEDICAL ASSOCIATION.

Annual Meeting at
W. W. FRANCIS, M.D., Sec., S. E. GONONIN, M.D., Pres.,
836 University St., Montreal, P. Q. Quebec, Canada.

STATE.

MEDICAL ASSOCIATION OF THE STATE OF ALABAMA.

Annual Meeting at Mobile, Ala., April, 1919.
H. G. PERRY, M.D., Sec., ISAAC L. WATKINS, M.D., Pres.,
Montgomery, Ala. Montgomery, Ala.

NATIONAL AND STATE MEDICAL SOCIETIES OF AMERICA.

ARIZONA MEDICAL ASSOCIATION.

Annual Meeting at (not yet decided) 1919.
D. F. HARRINGTON, M.D., Sec., Wm. A. Holz, M.D., Prest.,
Goodrich Bldg., Phoenix, Ariz. Globe, Ariz.

ARKANSAS MEDICAL SOCIETY.

Annual Meeting at Little Rock, Ark., May, 1919.
C. P. MERRITT, M.D., Sec., EDWARD F. ELLIS, M.D., Prest.,
214 S. Trust Bldg., Little Rock, Ark. Fayetteville, Ark.

CONNECTICUT STATE MEDICAL SOCIETY.

Annual Meeting at Bridgeport, Conn., May 21-22, 1919.
JOHN E. LANE, M.D., Sec., CHARLES J. BARTLETT, M.D., Prest.,
59 College St., New Haven, Conn. New Haven, Conn.

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

Annual Meeting at Santa Barbara, Cal., April, 1919.
SAXTON TEMPLE POPE, M.D., Sec., O. VAN ZWALLENBURG, M.D., Prest.,
930 Butler Bldg., San Francisco, Cal. Glenwood Bk., Riverside, Cal.

COLORADO STATE MEDICAL SOCIETY.

Annual Meeting at Denver, Colo. (date not decided), 1919.
CRUM EPLEN, M.D., Sec., F. H. McNAUGHT, M.D., Prest.,
Fueblo, Colo. Denver, Colo.

DELAWARE STATE MEDICAL SOCIETY.

Annual Meeting at Dover, Del., Oct. 13-14, 1919.
W. O. LAMOTHE, M.D., Sec., LUTHER CONWELL, M.D., Prest.,
Wilmington, Del. Camden, Del.

FLORIDA MEDICAL ASSOCIATION.

Annual Meeting at Miami, Fla., May 21-23, 1919.
GHAHAM E. HENSON, M.D., Sec., FREDERICK J. WATZEM, M.D., Prest.,
Jacksonville, Fla. Daytona, Fla.

MEDICAL ASSOCIATION OF GEORGIA.

Annual Meeting at Atlanta, Ga., April 16-18, 1919.
W. C. LYLE, M.D., Sec., J. W. PALMER, M.D., Prest.,
Atlanta, Ga. Albany, Ga.

MEDICAL SOCIETY OF HAWAII.

Annual Meeting at Honolulu, T. H., November, 1919.
H. H. BLOCH, M.D., Sec., EUGENE WOOD, M.D., Prest.,
Honolulu, T. H. Honolulu, T. H.

ILLINOIS STATE MEDICAL SOCIETY.

Annual Meeting at Peoria, Ill., May 20-22, 1919.
W. H. GILMORE, M.D., Sec., E. W. FUGENBAUM, M.D., Prest.,
Mount Vernon, Ill. Edwardsville, Ill.

IDAHO STATE MEDICAL ASSOCIATION.

Annual Meeting at Boise, Ida., July, 1919.
MO. E. MAXBY, M.D., Sec., Wm. F. SMITH, M.D., Prest.,
204 Idaho Bldg., Boise, Idaho. Boise, Idaho.

INDIANA STATE MEDICAL ASSOCIATION.

Annual Meeting at Indianapolis, Ind., Sept. 24-26, 1919.
CHAS. N. COMBS, M.D., Sec., W. H. STEMM, M.D., Prest.,
Terre Haute, Ind. North Vernon, Ind.

IOWA STATE MEDICAL SOCIETY.

Annual Meeting at Des Moines, Iowa, May 7-9, 1919.
T. B. TROSKAMONTON, M.D., Sec., MAX E. WHITE, M.D., Prest.,
Des Moines, Iowa. Clarinda, Iowa.

KANSAS MEDICAL SOCIETY.

Annual Meeting at Ottawa, Kan., May 7-9, 1919.
L. F. BARNER, M.D., Acting Sec., W. S. LINDSAY, M.D., Prest.,
Kansas City, Kan. Topeka, Kan.

KENTUCKY STATE MEDICAL ASSOCIATION.

Annual Meeting at Ashland Ky., (date not decided), 1919.
ARTHUR T. MCCORMACK, M.D., Sec., J. S. LOCK, M.D., Prest.,
Bowling Green, Ky. Mayville, Ky.

LOUISIANA STATE MEDICAL SOCIETY.

Annual Meeting at Shreveport, La., April 8-10, 1919.
P. T. TALBOT, M.D., Sec., W. H. KROLLS, M.D., Prest.,
141 Elk Place, New Orleans, La. New Orleans, La.

MICHIGAN STATE MEDICAL SOCIETY.

Annual Meeting at Detroit, Mich., May 21-23, 1919.
F. O. WAGNER, M.D., Sec., A. M. HUME, M.D., Prest.,
Grand Rapids, Mich. Owosso, Mich.

MINNESOTA STATE MEDICAL ASSOCIATION.

Annual Meeting at Minneapolis, Minn. (date not decided), 1919.
MARLEN R. HARR, M.D., Sec., GEO. DOUGLAS HEAD, M.D., Prest.,
Minneapolis, Minn. Minneapolis, Minn.

MISSISSIPPI STATE MEDICAL ASSOCIATION.

Annual Meeting at Hattiesburg, Miss., May 13-14, 1919.
T. H. DYE, M.D., Sec., W. S. LATHAM, M.D., Prest.,
Clarksdale, Miss. University, Miss.

MISSOURI STATE MEDICAL ASSOCIATION.

Annual Meeting at Excelsior Springs, Mo., May, 1919.
B. J. GOODWIN, M.D., Sec., M. P. OVERHOLSER, M.D., Prest.,
3517 Pine St., St. Louis, Mo. Harrisonville, Mo.

MONTANA STATE MEDICAL ASSOCIATION.

Annual Meeting at Missoula, Mont., July, 1919.
M. G. BALSAM, M.D., Sec., B. W. SPORTSWOOD, M.D., Prest.,
Billings, Mont. Missoula, Mont.

MAINE MEDICAL ASSOCIATION.

Annual Meeting at Portland, Me., June 18-19, 1919.
B. L. BRYANT, M.D., Sec., GEO. H. COOMBS, M.D., Prest.,
265 Hammond St., Bangor, Me. Waldoboro, Me.

MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND.

Annual Meeting at Baltimore, Md., April 22-24, 1919.
JOHN STAGGS DAVIS, M.D., Sec., JOHN RUHRAN, M.D., Prest.,
1211 Cathedral St., Baltimore, Md. Baltimore, Md.

MASSACHUSETTS MEDICAL SOCIETY.

Annual Meeting at Boston, Mass., June 3 and 4, 1919.
WALTER L. BURNAGE, M.D., Sec., SAMUEL B. WOODWARD, M.D., Prest.,
Jamaica Plain, Boston, Mass. Worcester, Mass.

NEW HAMPSHIRE MEDICAL SOCIETY.

Annual Meeting at Concord, N. H., May, 1919.
D. E. SULLIVAN, M.D., Sec., CHARLES P. BANCROFT, M.D., Prest.,
7 N. State St., Concord, N. H. 104 Pleasant St., Concord, N. H.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Annual Meeting at Syracuse, N. Y., May 6-8, 1919.
FLOYD M. CRANDALL, M.D., Sec., THOMAS H. HALL, M.D., Prest.,
17 W. 43d St., New York, N. Y. Syracuse, N. Y.

MEDICAL SOCIETY OF NEW JERSEY.

Annual Meeting at Spring Lake, N. J. (not decided), 1919.
WILLIAM J. CHANDLER, M.D., Sec., THOMAS W. HANCOCK, M.D., Prest.,
South Orange, N. J. Orange, N. J.

NEBRASKA STATE MEDICAL ASSOCIATION.

Annual Meeting at Lincoln, Nebr., May, 1919.
J. M. ATKIN, M.D., Sec.-Treas., J. M. BANISTER, M.D., Prest.,
Omaha, Nebr. Omaha, Nebr.

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

Annual Meeting at Fincelhurst, N. C., April, 1919.
BENJ. K. HAYS, M.D., Sec., CRONUS THOMPSON, M.D., Prest.,
Oxford, N. C. Jacksonville, N. C.

NEW MEXICO MEDICAL SOCIETY.

Annual Meeting at Albuquerque, N. Mex., October, 1919.
R. E. McBRIDE, M.D., Sec., JOHN W. KINSINGER, M.D., Prest.,
Las Cruces, N. M. Roswell, N. M.

NORTH DAKOTA STATE MEDICAL ASSOCIATION.

Annual Meeting at Grand Forks, N. D., June, 1919.
E. J. ROWE, M.D., Sec., B. A. PHAY, M.D., Prest.,
Cassilton, N. D. Valley City, N. D.

OHIO STATE MEDICAL ASSOCIATION.

Annual Meeting at Columbus, Ohio, May 6-8, 1919.
H. M. FLATTER, M.D., Sec., E. O. SMITH, M.D., Prest.,
Columbus, O. Cincinnati, O.

OKLAHOMA STATE MEDICAL ASSOCIATION.

Annual Meeting at Muskogee, Okla., May, 1919.
O. A. THOMPSON, M.D., Sec., LEONARD S. WILLOUGH, M.D., Prest.,
Surety Bldg., Muskogee, Okla. McAlester, Okla.

OREGON STATE MEDICAL ASSOCIATION.

Annual Meeting at Portland, Ore. (not yet decided), 1919.
ANDREW J. BROWNING, M.D., Sec., C. M. BARBER, M.D., Prest.,
Selling Bldg., Portland, Ore. Electric Bldg., Portland, Ore.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Annual Meeting at Harrisburg, Pa., Sept. 22-25, 1919.
W. F. DONALDSON, M.D., Sec., FREDERICK L. VAN SICKLE, M.D., Prest.,
Jenkins Arcade, Pittsburgh, Pa. Olyphant, Pa.

RHODE ISLAND MEDICAL SOCIETY.

Annual Meeting at Providence, R. I., June 5, 1919.
J. W. LEECH, M.D., Sec., GARDNER T. SWARTS, M.D., Prest.,
111 Broad St., Providence, R. I. Providence, R. I.

SOUTH CAROLINA MEDICAL ASSOCIATION.

Annual Meeting at Florence, S. C., April 15-16, 1919.
EDGAR A. HINES, M.D., Sec., JAMES A. HAYNE, M.D., Prest.,
Sececa, S. C. Columbia, S. C.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION.

Annual Meeting at (not decided), 1919.
R. D. ALVAR, M.D., Sec., D. L. SCANLON, M.D., Prest.,
202 S. Main St., Aberdeen, S. D. Volga, S. D.

TENNESSEE STATE MEDICAL ASSOCIATION.

Annual Meeting at Nashville, Tenn., April 8, 1919.
OLIN WEST, M.D., Sec., RICHMOND MCKINNEY, M.D., Prest.,
Nashville, Tenn. Memphis, Tenn.

STATE MEDICAL ASSOCIATION OF TEXAS.

Annual Meeting at Waco, Tex., May 13-15, 1919.
H. TAYLOR, M.D., Sec., S. F. RICH, M.D., Prest.,
Fort Worth, Tex. Marlin, Tex.

UTAH STATE MEDICAL ASSOCIATION.

Annual Meeting at Salt Lake City (date not decided), 1919.
WM. L. RICH, M.D., Sec., GEO. W. MIDDLETON, M.D., Prest.,
Salt Lake City, Utah. Salt Lake City, Utah.

VERMONT STATE MEDICAL SOCIETY.

Annual Meeting at Burlington, Vt., Oct. 9-10, 1919.
W. G. RICKEN, M.D., Sec., C. W. BARTLETT, M.D., Prest.,
St. Johnsbury, Vt. Bennington, Vt.

VIRGINIA STATE MEDICAL SOCIETY.

Annual Meeting at Richmond, Va., October, 1919.
PAULUS A. IRVING, M.D., Sec., ENNON G. WILLIAMS, M.D., Prest.,
Farmville, Va. Richmond, Va.

WASHINGTON STATE MEDICAL ASSOCIATION.

Annual Meeting at Spokane, Wash. (date not decided), 1919.
C. H. THOMSON, M.D., Sec., H. P. MARSHALL, M.D., Prest.,
Walker Bldg., Seattle, Wash. Spokane, Wash.

STATE MEDICAL SOCIETY OF WISCONSIN.

Annual Meeting at Milwaukee, Wis., Oct. 1-3, 1919.
ROCK SLEYSER, M.D., Sec., D. J. HAYES, M.D., Prest.,
Wauwatosa, Wis. Milwaukee, Wis.

WEST VIRGINIA STATE MEDICAL ASSOCIATION.

Annual Meeting at Clarksburg, W. Va., May, 1919.
J. HOWARD ANDERSON, M.D., Sec., ROBT. J. REED, M.D., Prest.,
Martytown, W. Va. Wheeling, W. Va.

WYOMING STATE MEDICAL SOCIETY.

Annual Meeting at Thermopolis, Wyo., Sept. 10-11, 1919.
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Powell, Wyo. Worland, Wyo.

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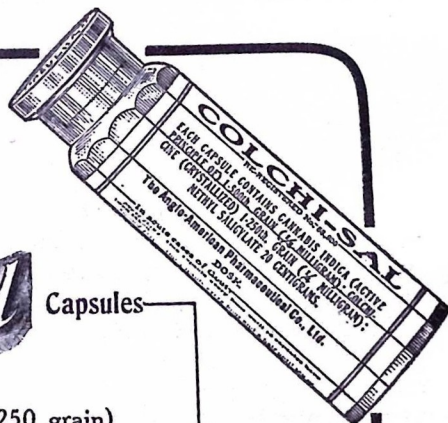
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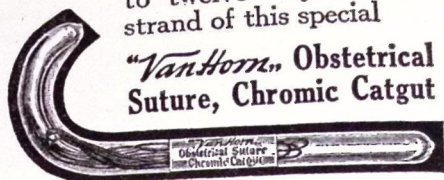
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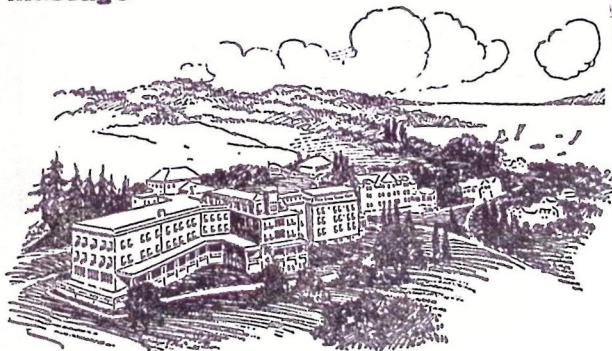
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A THERAPEUTIC SUGGESTION CONCERNING ENDOCRINES.

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THE human body is managed by the endocrine glands of the body. You have an automobile, and it is run by gasoline of one kind. In spite of the fact that it has a competent mechanism, if you are short of gasoline, or have a poor quality of gasoline, that invalidates the value of the automobile. But in the human body you have many kinds of gasoline given off by many glands, each gland producing many secretory elements. The particular division of these secretions we do not yet understand, but each gland and its special components has a definite specific action; and every individual from the time he is born until the time he dies is under the influence of these many different kinds of elements—some of them having to do with the development of the bones and teeth, some with the development of the body and nervous system, some with the development of the mind, etc., and, later on—with the introduction of sex features—with reproduction. Still later on, these elements have to do with the preservation of these structures and functions which constitute the body and mind, and if the gasoline elements which are given off by these glands become under- or over-active there is a disturbance of the specific functions which these component parts are supposed to perform; and since these glands are dependent on each other, the upset of one disturbs the rhythmical action of the others; so that accordingly a woman during her development and maturity keeps in action as her glands keep in normal action; and as she approaches the climacterium and, later on, the years of senility, her glands change and her activities change, so that if she lives long enough she is pretty nearly back to where her body functions started in the early years.

In recent years our knowledge as to the physiology of the ductless glands has been put to the test by endocrine therapy, and there is no longer any doubt that the future of medicine lies along these lines. In my own practice, endocrine therapy has displayed and replaced the old time drugs, so that I might safely say that practically 90 per cent. of all prescriptions for internal use consist almost entirely, if not wholly, of endocrine extracts. The varying forms of amenorrhea, most of the menorrhagias and metrorrhagias, threatened miscarriage,

habitual miscarriage, sterility, the disorders and disturbances of the climacterium, and many other states met with in gynecological practice may be corrected in many instances specifically by a certain extract; in many other cases, by a combination of extracts.

We know what many of the gland extracts will do, but we have not yet solved the question as to how many various elements enter into the secretions produced by any of these glands. We know the difference between the adrenal medulla and the cortex, between the anterior and posterior lobes of the pituitary, between the interstitial secretion of the ovary and that of the follicle apparatus, and in all probability will some day find the following explanation: Many of these internal glands secrete more than one element, each of these elements acting directly on certain structures, or nerves, or nerve ends, and having definite stimulating, trophic, or inhibiting functions. On the other hand, such of the gland elements as we know have a varying selective action according as they act on the bones, or the muscles, or the mucous membranes, or the musculature of the hollow viscera, or on certain nerves, or on the branches of certain nerves, or on the nerve ends. With either of these ideas in mind it is easy to picture all of the functions of the body carried out by the proper relation between stimulation and inhibition.

The selective activity of the endocrine products is easy to understand. Pathology has taught us much that leads to a proper understanding of physiology. In anterior poliomyelitis there is a selective action by the toxins on certain cells in the anterior horns; in locomotor ataxia there is a selective action of the toxin on the posterior column of the spinal cord; in shingles, some toxin acts on definite nerve roots. Hence it is no stretch of the imagination to conclude that nature has conferred on the ductless glands of the human body control over practically all its functions by giving to certain elements definite, specific activities.

Whatever sequelæ and complications the internist may find in influenza at the present time, the gynecologist and obstetrician has his attention fixed very decidedly on the endometrium, whether the patient is pregnant or not. I have had several patients, not pregnant, whose menstruation came on early and excessively shortly after an attack of influenza. Several pregnant patients have spotted and stained after slight attacks of influenza. One patient miscarried in the fifth month after a pneumonia; and another, after a slight attack with no pneumonic process.

The uterus is a lymphoid tissue, and I have come

to the conclusion that the uterine mucosa by its sensitiveness to the influenza toxin proves that the disease affects markedly the thymico-lymphatic system, and that when this barrier is passed the toxins act most disastrously on the pituitary and adrenal structures; so that the specialist in diseases of women may readily come to the conclusion that the influenza toxin—from his standpoint, at least—has, if not a selective action on the endometrium at least a predilection in that direction.

Trophic control over development and growth, and the maintenance of the normal state in the various structures of the body is vested in the ductless glands, and immunity or lack of immunity to various diseases is more than probably one of the most direct evidences of their important functions. Normal relation of these gland elements, whether their action is exerted directly on the tissues in question or upon the structures through the medium of the nerves and nerve ends, preserves a proper state of growth; and the lack of trophic care or an overstimulation of tissue cells and epithelial cells must lead to abnormal growth. In this view of the question, I believe will eventually be found the cause of benign and malignant growths of the body.

Dermoid cysts represent the growth of embryonic elements displaced in clefts during the development of the embryo, or of such elements—located, for instance, in the ovary—which at first dormant, are not inhibited and are at some later period stimulated to growth. That many of these cells have lain dormant for years and have then taken on a growth, proves the question to be either lack of inhibitory control or overstimulation.

Chorioepithelioma is, after all, the very best evidence of lack of inhibition or over-stimulation in the mother afflicted with this condition. Certain cells of the ovum's outer layer have been retained in a uterus after a miscarriage or a full-term pregnancy, and after a few months, or even after two or three years, these develop into a malignant growth characterized by metastatic deposits carried through the blood channel. It is perfectly evident that these cells have grown either because a protective ferment or element is lacking in the individual in whose uterus these cells have developed the above mentioned growths or because an over-stimulation exists which forces these cells and fosters their growth.

The uterus of every woman is the potential carrier of myoma or fibroma. If she bears children and the uterus is engaged in carrying out the functions for which it is prepared by the action of the ovary, thyroid, pituitary, and other glands, there is certainly less likelihood of fibroma or myoma developing through hyperpituitarism than if she have no children.

For instance, we have the pituitary gland, especially the posterior lobe, which is often hypofunctionative. We know that a woman grows stout, menstruates less and less, and has an atrophy of the uterus and ovaries, often permanent, when the posterior lobe underacts markedly for a long period of time, this condition being called dystrophia adiposogenitalis. Therefore, on the basis of both theory and practice, we know what hyperactivity of this lobe should produce. It overstimulates both ovary and uterus, and in all probability is the

cause of fibromata and myomata of the uterus and of the condition known as fibrosis uteri, in which condition, at operation, the ovaries are found large and hyperplastic and certainly are overactive.

There are so many manifestations of hyperpituitarism that are probable but not yet definitely settled, that it may seem almost theoretical to mention some of these states. For instance, many cases of dysmenorrhea are cases of hyperactivity of the pituitary lobe at the menstrual crisis. Again, I recently operated on a patient suffering from what was diagnosed as prolapse of the uterus, the cervix appearing at the vulva. She had had no children, in fact, was unmarried. I diagnosed it as a case of elongatio colli, with retroflexed uterus. The uterus was more than twice the normal length. I amputated the cervix at the level of the internal os, and the amputated cervix was certainly over three inches long. In talking on this case during this step of the operation, I stated that this condition, as well as fibroids and fibrosis of the uterus, was an evidence of some hyperactivity of the posterior lobe. When I opened this patient's abdomen in order to correct the retroflexion, I found a large uterus with a fibroid the size of a walnut on the fundus. This, of course, might have been, unless my theory is right, simply a coincidence, but I believe the above expressed view to be the correct one.

I wonder if the following case is to be viewed as merely a coincidence: Patient, married six years, 2-para, menstruates every twenty-eight days, duration four to seven days, large in amount. Her premenstrual phenomena are sleeplessness and frequency of bowel movements, which have become more marked in the last year. Her blood pressure was 140, and my diagnosis was hyperpituitarism, combined possibly with hyperthyroidism. In asking her whether she had nursed her second baby, born two years ago, she replied, no, because the baby had suffered from pyloric spasm and had been operated upon for the same. If the whole question of heredity is, as I believe, mainly a matter of inheritance of endocrine relationship, then this hyperpituitarism in the mother and pyloric spasm is more than simple coincidence.

We know that the history of a patient's premenstrual phenomena constitutes one of the most important diagnostic aids in all gynecology, for at this period, which is a crisis, interglandular weaknesses are brought into the foreground. Many patients suffer from marked headaches at and during this period; others suffer from nausea and vomiting, and these undoubtedly represent overactivity on the part of related glands, among which the pituitary is certainly most active at menstruation.

When a patient is pregnant and the menstrual activities of the ovary, thyroid, and pituitary are nullified and held in check by the placental secretion, we have a constant struggle between these two—secretions of the mother and the secretion of the ovum—during the entire 280 odd days of pregnancy. If the placental secretion cannot hold the maternal secretions in check, the latter assert themselves and the patient has a miscarriage. This is the explanation of repeated, habitual miscarriages, and hyperpituitarism of the posterior lobe plays an important part in this condition.

Many pregnant patients are not nauseated at any time while they are carrying an ovum *in utero*; others are nauseated in varying degrees. I have frequently noted that many patients who are not nauseated are quite drowsy and sleepy. I am accustomed to tell such sleepy patients that this is a favorable sign, as nausea is not a probable annoyance from which they will suffer. This nausea and vomiting represents a reaction on the part of the system to the introduction of the placental secretion. If a stable adjustment results quickly, the nausea disappears quickly. In this readjustment, undoubtedly (in the cases which vomit and vomit decidedly), we are concerned either with a toxic influence produced by the placental extract or with an exaggerated reaction on the part of the posterior lobe, with hypersensitiveness of the gastrointestinal tract. How great a part transient forms of pyloric spasm play in this persistent nausea and vomiting remains to be decided. Those patients who are sleepy and drowsy (and these are not nauseated nor do they vomit) have the opposite condition—an underactivity of the posterior lobe.

I have always considered fibrosis to be due to hyperactivity of the ovaries. Now that we know the special relation of the pituitary to the ovary and the uterus, we realize that at the menopause period, when gland activity as it relates to the sex-structure should diminish, these glands may, on the contrary, remain active or hyperactive. This will give at the menopause period ovaries which do not regress, a uterus which is overstimulated, with the result that the patient has a menorrhagia or metrorrhagia, a large uterus, and large ovaries at a time when atrophy should be in view. Therefore, the study of any change occurring in a patient at the climacteric period (many of these changes begin years before the menopause comes on) must concern itself with the question of regression. If ovary, thyroid, and pituitary gland diminish in activity harmoniously and in the same ratio, the patient develops amenorrhea, atrophy of the genitalia, with no symptoms of hyperpituitarism, or hyperthyroidism, or hyperovarianism. If the regression is too rapid for the body needs, we have flushes, due to sudden loss of ovarian stimulus; or hypothyroidism, if the same condition takes place in the thyroid; or hypopituitarism, if the hypophysis shows the same rapid decline.

When we consider that one or other of these three glands, leaving the adrenals and other secretory structures out of consideration—may regress much more quickly or more slowly than the other two; and that various combinations of these processes may take place, we see that we may have in any patient various combinations of hyperactivity or hypoactivity which need not be permanent but which may change and fluctuate at this period, so characterized by instability that the laity have well named it "change of life." It is no rare thing to see a patient during or after the menopause suffering from alternating hyperthyroidism and hypothyroidism, and the same is true concerning the pituitary and the ovary.

In the condition, to which we have already referred, known as dystrophia adiposogenitalis, the patients are very sugar-tolerant and may be given large amounts of glucose without sugar appearing

in the urine. By theory and by observation, it must of necessity be concluded that overactivity of this lobe will make the patients very slightly tolerant of sugar, and this is undoubtedly one of the important causes of glycosuria. We know the relation of the pancreas to glycosuria, but we have not, in practice, at least, given sufficient attention to the relation which the ovaries, and more especially the thyroid and the pituitary, bear either to the pancreas directly or to the sugar-forming or sugar-retaining qualities of the body. Therefore many patients with fibromata and myomata have glycosuria, many of them have tachycardia, which means either a coincident involvement of the thyroid or tachycardia from hyperpituitarism indirectly.

Whether this overactivity of the pituitary plus the overstimulation of the thyroid has anything to do with gallstones, I do not know. We do, however, observe frequent association between fibromata of the uterus, the post partum period, and stones in the gall-bladder.

In gland therapy we must realize that it is easy to administer the extracts when any gland fails in action. We simply supply what is needed. The more difficult and eventually glorious part is to overcome the hyperaction of any gland; and this must be done by selecting those other extracts which counteract or antagonize this activity.

In searching for endocrine elements that are antagonistic to the posterior pituitary lobe, we may take these three points into consideration. Mammary gland formation and mammary gland extract certainly have the effect of diminishing menstruation, contracting the uterus, shrinking fibroids, and limiting the activity of the ovaries. We must presume that it may have the same effect upon the posterior pituitary lobe.

The thymus has the effect of controlling the activity of the gonads until the developmental age comes on, after which the thymus is supposed to regress and allow the sex arrangements to develop. We know, then, that thymus extract, if given therapeutically, will in certain cases diminish menorrhagia and metrorrhagia through action on the ovaries. It may have an effect on the posterior pituitary lobe.

When a woman is pregnant, the placental secretion inhibits the menstrual activity of the ovary, plus the thyroid and the posterior pituitary lobe. Therefore we may have in placental extract a secretion that has some controlling influence over the posterior pituitary lobe. If this be so, it should help us in the treatment of dysmenorrhea due to posterior lobe hyperactivity, and should help us in those cases of glycosuria due to the hyperactivity of the posterior hypophysis gland. I have helped, not cured, many patients suffering from dysmenorrhea, by giving placental gland extract by mouth and by hypodermic. I have had remarkable results in several cases of glycosuria at the climacterium, seeing the urine clear up and the sugar disappear by the administration of placental gland extract, with very little restriction of the diet.

We may then conclude that certain forms of glycosuria, if they be dependent on pituitary lobe hyperactivity, should react and improve if placental extract be given.

If the mammary gland and the thymus, in addition to acting on the uterus and the ovary, also inhibit the posterior lobe, they should be tried, if not in other forms of glycosuria, at least in the form of which I have just spoken. How many cases of hypertension or increased or raised blood pressure, especially those noted in women at the menopause or subsequently, are due to hyperactivity of the posterior pituitary lobe remains to be decided. At this menopause or climacteric period, when the activity of the ovaries is supposed to diminish, when there should be and often is a regression in activity on the part of the thyroid, we expect that the posterior lobe will regress too, since the patient's sex activity is no longer of importance. This regression, however, often fails to take place.

My purpose in setting down these views is to direct attention to the possible value of thymus extract, mammary extract, and especially placental extract in those conditions due to hyperpituitarism, among which are certain cases of glycosuria.

The influence and activity of the endocrine glands are evidenced by the stimuli and the changes produced on the body, the nervous system, and the psyche. In some instances abnormalities of gland activity are characterized by physical stigmata; in others, by changes in the activity of organs whose function is continually under the influence of the nervous system; in still other individuals, abnormalities of gland activity are evidenced by changes in the psyche; and in some, combinations of various forms are in evidence. If we can fathom and understand what the ductless glands have done to an individual up to the stage of puberty, we may appreciate why the individual develops as he does; if we can reason out what these ductless glands have done to that individual from puberty up, we may understand why that individual is what he is and why so many changes have occurred in him; if we can eventually fathom what hereditary or accidental and intercurrent factors are responsible for his gland changes and for the consequent systemic, mental, and psychic factors, then medicine will have achieved a glorious work.

134 WEST EIGHTY-SEVENTH STREET.

TUBERCULOUS BACTERIEMIA AND MASSIVE EXOGENOUS TUBERCULOUS INFECTION IN MAN.

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MUCH has been written upon the subject of tuberculous bacteriemia in man and very widely varying experimental results have been reported. Some investigators have found tubercle bacilli present in a very large percentage of cases, others find them but rarely under similar conditions. The antiformin method of concentration of the bacilli of Uhlenhuth and its various modifications has been attacked and the claim has been made that the stained objects seen were not tubercle bacilli but artefacts. It has also been claimed that the acid fast bacilli demonstrated were not tubercle bacilli but saprophytes which grow in distilled water or in the water taps,

or circulate normally in the blood of rabbits, also that the lesions found in animal experiment are not always tubercles, etc. Liebermeister¹ has made a series of investigations with the use of Schnitter's modification of the antiformin method in which he employed extraordinary precautions to avoid these sources of error and reached the following results: In fifteen cases of open pulmonary tuberculosis he found acid fast bacilli in every case, in thirteen cases of closed pulmonary tuberculosis in eleven cases. Bacmeister is not willing to admit that the bacilli thus found are pathogenic. While it must be conceded that some of the investigators who find tubercle bacilli present almost universally in the blood have not always exercised due caution in guarding against error; on the other hand the methods of the critics themselves are also sometimes open to criticism, as for example the choice of the rabbit for inoculation with human tubercle bacilli, it being well known that the distinction between human and bovine tubercle bacilli is usually made on the assumption that human tubercle bacilli are not pathogenic for rabbits. Fortunately we can spare ourselves the task of a full review of this most perplexed subject, for if necessary we can afford to give up the results obtained by the antiformin method and rely solely upon those of the inoculation of animals. These give unquestionably positive results. Bacmeister,² the severest critic, concedes that the animal experiments of Liebermeister withstand criticism and states that to Liebermeister is due the credit of having proved that virulent tubercle bacilli circulate in the blood much more frequently than has hitherto been supposed. We will therefore confine ourselves to his work. In one hundred cases of tuberculosis Liebermeister obtained forty positive results. He had six positive cases in persons without clinically demonstrable tuberculosis, the total number of cases examined not being stated. In his judgment a positive result proves the presence of tubercle bacilli in the blood, but a negative result does not necessarily prove their absence. In other words, animal inoculation is a reliable test, but it is not sufficiently sensitive. Liebermeister used three to six c.c. of blood in his injections and found that, even in cases of severest tuberculosis, of three guinea pigs injected with the same blood only one or two fell sick, which is to be explained, he thinks, by the rarity of the organisms in the blood, their death, and the presence of immunizing substances in the blood. Now if we suppose that 6 c.c. are used as injection and that six tubercle bacilli constitute the minimum infecting dose, as has been stated by another authority, then assuming the volume of the blood to be 5000 c.c., since the blood taken from an arm vein remote from probable tuberculous lesions should fairly represent the general condition of the blood as respects the presence of tubercle bacilli, we should have, as the minimum concentration of tubercle bacilli which would infect, one tubercle bacillus per cubic centimeter, or 5000 tubercle bacilli circulating at one time in the blood, a very respectable bacteremia indeed. Calmette,³ using the method of direct transfusion of blood from tuberculous to healthy guinea pigs, states that the results proved conclusively that even in mild tuberculous infection the blood almost always contains tubercle bacilli.

It would appear then that the reason why positive results are not obtained in a larger percentage of cases of tuberculosis by the inoculation of their blood into animals is rather that an insufficient amount of blood is employed under the ordinary conditions of experiment than that tubercle bacilli are absent. But it is not necessary to claim so much. If tubercle bacilli circulate in the blood of the consumptive even occasionally during the localization of the disease to the lungs—often a period of many years—the fact that a generalized miliary tuberculosis does not result can only be explained by an immunity to the presence of the tubercle bacillus at parts remote from existing lesions which is fairly comparable with the immunity observed in animal experiment.⁴ The tuberculous guinea pig suffers no harm from injected tubercle bacilli. The consumptive patient suffers no harm from the tubercle bacilli which escape from his lesions. He suffers no harm, that is, during the period of localization. Just before death a generalized miliary tuberculosis often develops in the chronic case which has resisted hematogenous extensions of the disease for many years. The dissemination of tubercle bacilli at the close of life may be somewhat greater than in the previous course of the disease, but the difference is one of degree only. If the presence of the tubercle bacillus in the blood meant miliary tuberculosis the patient would have died long before. The reason that tubercle bacilli circulated harmlessly during a long time was that they were prevented from colonizing by the processes of immunity. When the vital powers fail rapidly and cachexia becomes marked the cells no longer furnish the protective substances, and general infection takes place. This view is corroborated by the observations of Fischer,⁵ who saw reactivation of tuberculosis from old fibrous glands in the cachexia of cancer, and other wasting diseases, active tuberculosis elsewhere in the body being absent.

We are warranted in saying that under ordinary conditions the consumptive is immune to tubercle bacilli which circulate in his blood. It remains to inquire what the resistance of the human body already infected with tuberculosis is to massive infections from without. There is naturally less evidence than has been obtained by experimentation upon animals, but sufficient when properly analyzed to prove that here also man does not differ in his resistance from the tuberculous animal of experiment.

Kleine⁶ gives the following facts as to inoculation with bovine tubercle bacilli: In Königsberg half a dozen patients with cancer were inoculated subcutaneously with bovine tubercle bacilli which had been shown to be virulent for rabbits. Abscess-like foci appeared locally, containing at first tubercle bacilli in abundance. These foci healed gradually. The patients lived from some months to a year. At their autopsy v. Baumgarten found small scars at the point of inoculation which were free from tubercle and tubercle bacilli. There was no trace of tuberculosis in the neighboring glands nor in the internal organs. Carl Spengler injected himself with 0.5 mg. of a suspension of living bovine tubercle bacilli subcutaneously. An abscess formed and broke down in a month. A few tubercle bacilli were present. The ulceration lasted eight months,

then closed, leaving a pigmented scar. The regional glands were never even transitorily painful or swollen. The infection remained completely localized and gave the impression of being entirely benign. Klemperer, after twice rubbing a suspension of bovine tubercle bacilli into shallow cuts without producing the slightest local reaction, injected 0.25 c.c. of a suspension of virulent bovine tubercle bacilli subcutaneously into his left arm. At the point of injection there was a lively inflammation without fever, which declined in a few days. After two weeks there remained a painless roundish tumor of about walnut size, which finally, as a small chronic inflammatory infiltration of the subcutaneous tissues, was extirpated after ten months. Nothing characteristic of tuberculosis was found. Of the regional glands only the cubital of the left elbow was swollen for a short time. Klemperer injected into a colleague first 0.25 c.c. then 0.5 c.c. of a suspension of bovine tubercle bacilli into the left arm subcutaneously. As notwithstanding local symptoms (not described) the general condition was relatively good and the weight even increased, injections were continued for therapeutic reasons. From March 26 to the middle of May Klemperer made twelve injections of 0.25 c.c. at one-half week intervals into the sides of the abdomen. These were at first borne excellently. There was only slight, sometimes no fever, no swelling, no pain. Only on the right side where several injections were placed close together was there marked infiltration and an abscess finally formed which was some time in healing. This was ascribed by Klemperer to the nearness of the injections to one another. Klemperer made in all fifty-four inoculations on six patients. These were borne well. The local disturbances were slight. Four times there were abscesses which healed more or less rapidly. There were no general disturbances in any case. The patients even reported subjective improvement and gain in weight.

Occasionally the accidents of the laboratory give an opportunity for massive infections. A workman twenty-eight years of age, in consequence of the breaking of a 10-liter bottle, spilled the fluid containing enormous quantities of living tubercle bacilli over his clothing. He was healthy at the time of this accident, but two years later pains appeared in the left chest and pulmonary tuberculosis became manifest. A sister of the workman having fallen sick with pulmonary tuberculosis nine years before, a family tendency to the disease was assumed. A connection between the accident and the later disease of the lungs could not be established. His claim for damages was rejected by the courts.⁷

A similar instance is known in which a workman dropped and broke a bottle containing dry tubercle bacilli, but received no harm therefrom.

A quack in Brooklyn advertised a cure for consumption. He procured a tuberculous cow and induced a woman to submit to inoculation into the neck of virus obtained directly from the diseased animal, an examination having previously been made by three physicians who certified that she was entirely free of tuberculosis. In a short time—too short a time—the claim was made that she had become tuberculous, and this was also certified to by physicians. The advertised treatment was then

administered and in a remarkably short time she was declared to have quite recovered from the disease. The woman not long afterward committed suicide, and the autopsy discovered no evidences whatever of tuberculosis.*

Butchers frequently receive infection with bovine tuberculosis in cuts upon their hands, and similarly the "anatomical wart" of the pathologist is due to infection at human autopsies. In both cases the infection remains local and harmless, although on account of its location it is exposed to frequent irritation and may be slow in healing.

The greater part of the foregoing evidence relates to infection with bovine tubercle bacilli. They were used in the experimental inoculations in the belief that they are relatively innocuous to man. This belief has its origin in the observation that the milk of tuberculous cows appears to be harmless for the human adult. But recent investigations have shown that bovine tuberculosis is not uncommon in children, the difference between them and adults being manifestly due to the fact that the child is not immunized against tuberculosis, whether of bovine or human origin, but the adult is. The bovine and human strains of the tubercle bacillus are closely allied, in fact there is some evidence which goes to show that the bovine bacillus undergoes changes during a long stay in the body of man which assimilates its characteristics to those of the human bacillus, and it is hard to explain the fact that bovine tubercle bacilli are common in children, but rare in adults, on any other hypothesis than the assumption that bovine bacilli in time practically become human bacilli.

If this is the case the evidence above cited abundantly proves that the man who has received a primary infection with tubercle bacilli becomes thereby immunized not only to the bacilli from his own lesions, but also to the massive introduction of bacilli from without. That this should prove to be true is to be expected from the manifest analogies which exist between the tuberculosis of man and that of animals. The facts derived from the experimental inoculation of animals may safely be employed to explain the phenomena of human tuberculosis.

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TUMORS OF THE BLOOD.

By E. H. P. WARD, M.D.,

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IN an article on tumors published in the *New York State Journal of Medicine* for March, 1907, I advanced the view that a tumor results from the arrested development of one or more cells of the tissue in which the tumor originates and of which it is characteristic; this arrest of development resulting in an atavistic reversion whereby the cell or cells affected, and those resulting from their multiplica-

tion, fail to perform their normal functions in the tissue and start off on a more individualistic course marked by more rapid multiplication of a more or less irregular type, tending toward degeneration, and reverting to some of the qualities of the ancestral unicellular organism, such as being able to live a more or less detached life apart from their proper tissue. As a secondary feature, the supporting and nourishing tissues are led astray to a greater or less extent and try to keep pace with the growth of the aberrant cells. And the pathological results of tumors on the organism are due to: (1) the failure of the tumor cells to perform their proper functions; (2) the mechanical effects of the original tumor mass and its metastases; and (3) the production of toxins and other effects due to the altered metabolism and degeneration of the tumor cells and their supporting tissues.

We are, of course, familiar with the occurrence of arrested development in entire tissues and organs, and in some cases very striking atavistic reversions result—as, for example, hare-lip, cleft-palate, persistence of branchial clefts, *spina bifida*, patent *foramen ovale*, and others as numerous as the tissues and organs of the body. It has been a long and complicated process of development from the amoeba to man, and no doubt many were the failures by the wayside. Existing forms of metazoa represent the survivors still plodding along on life's journey, we know not to what goal. But each individual organism in its development has, more or less completely, to recapitulate the life-history of its kind, from the single cell to the mature organism, adding what new features it may; and it is only to be expected that many failures in development will result, not only in organs and tissues but in individual cells as well. In fact, if we did not find the answer at hand in the form of tumors, we might well question why the development of individual cells in tissues did not sometimes become arrested, and speculate as to what might happen if it did.

As to the cause of arrested development, whether in single cells, organs, individuals, or races, it may be some injurious influence of chemical, mechanical, or other nature that we can recognize, or it may just happen. We do not know what life is or why organisms and their cells develop at all; how then shall we be able always to say why they fail to develop? Does an ignorant savage, seeing for the first time an automobile, broken down by the roadside, know what caused it to stop, when he has not the remotest conception of what ever made it go? No more can we comprehend the underlying strata of life, which crop up in unexpected places to add to the roughness of our journey.

But after writing the article referred to above, and in thinking further on the subject of tumors, it occurred to me that if a tumor is due to the arrested development of a cell, then each type of cell in the organism ought to have its characteristic tumor. And, of course, there are recognized tumors of nearly all the tissues of the body—of all, in fact, except the blood-forming tissues. But why should we not have cases of arrested development of cells in the blood-forming tissues, giving rise to conditions analogous to those in recognized tumors? It required but a rapid survey of the pathology and clinical manifestations of the mysterious

anemias to recognize at a glance the analogy of the principle ones among them to the recognized tumors.

We do have tumors of the blood-forming tissues in the following diseases: (1) *pernicious anemia*, where the erythroblastic tissues start to proliferate, and metastases occur to the marrow of the long bones and the lymph glands; (2) *myeloid leukemia* (the classification and terminology are taken from Osler's "Practice of Medicine," edition of 1916), where the tumor process starts in the bone-marrow and metastasizes to the lymph glands, spleen, and other organs of the body in typical tumor fashion; (3) *lymphoid leukemia*, where the proliferation starts in the lymph glands and metastasizes to the skin, etc., and in the special form of *chloroma*, to the skull, orbit, long bones, and viscera generally; (4) *Hodgkin's disease*, where also the process starts in the lymph glands and metastases occur to the spleen, long bones, liver, kidneys, intestines, tonsils, etc.; and (5) possibly other less definite forms of anemia. The *aplastic* type of pernicious anemia presents an interesting contrast, as in this case we have a simple atrophy of the blood-forming tissues as compared with the orgy of irregular and temporarily exuberant cell proliferation which in these other anemias precedes the final degeneration and loss of function, and tends to make the disease longer drawn out. Consider the many irregular types of cell in these anemias, how the growths in some of the leukemias infiltrate neighboring tissues and form metastases; and compare the various types of giant cell with the giant cells of sarcoma, the evidences of toxic action on the system with the tumor cachexias, and the acute form of lymphoid leukemia with the malignant tumors and the intermissions of other forms with the quiescent stages of tumors; also the effects of x-ray treatment on tumors and on some of the leukemias. Cabot, writing in Osler's "System of Medicine," states that the incidence of certain of the leukemias resembles that of tumors; and, in fact, some investigators have considered some of the leukemias as related to myeloma and sarcoma, and Hodgkin's disease has been confused with lymphosarcoma. But why these mysterious anemias have not all been recognized finally and conclusively as tumors of the blood-forming tissues is more than I can comprehend, after once regarding them from this point of view. I suppose the picture presented by the blood itself, with the strikingly irregular shape and structure of the cells, has diverted attention from the true nature of the disease, as in no other tumors do we find the cells swimming around loose in the blood, at least not in noticeable numbers. I believe that it can be necessary only to focus the light of research on these anemias from this angle to get them assigned to their proper place in medicine—with the tumors.

Alas, how little that term "tumor" conveys of the many characteristics and the intricate mechanism of these cellular aberrations. If these anemias are really identical with tumors in their nature, they throw an interesting side light on the nature of the tumor process, tending to support my belief that this process is fundamentally an arrest of cell development; for the many nucleated red corpuscles in the blood characteristic of these anemias, and

especially of pernicious anemia where the red cells are particularly concerned, are obvious cases of arrested cellular development; and the embryonic form of the erythroblastic neoplasms in the marrow of the long bones in this anemia is a case of reversion resulting from arrest of development. Let me make clear just what I mean by arrested development of a cell and reversion. The cells in the lowest strata of epithelial tissues, the cells of gland tissues and connective tissues, and in a general way all the living cells of the body, including, of course, those of the blood-cell-forming tissues, are either constantly multiplying to replace wear and tear, or stand ready to multiply to repair an injury. Of course, this is the case with some tissues more than with others, the muscle and nerve cells, for example, being so highly specialized that they do not retain much if any power of multiplication and regeneration (except from within the cell), and it is significant that tumors occur but rarely in these tissues and are relatively unimportant (unless, indeed, the arrested development, with atavistic reversion, characteristic of some of the insanities be considered analogous to tumors, the changes taking place within the nerve cells and being manifested principally by derangement of function rather than of form and manner of growth; thus senile dementia being essentially similar to the cancer of old age). But in the more actively regenerating tissues the cells either constantly multiply and develop their full tissue functions and characteristics in a highly specialized way, and in close coordination with both their fellow cells of the same tissue, and also with their supporting and nourishing tissues; or else stand in reserve, with their power of multiplication and coordinated development latent, ready to exercise these powers in response to an injury. And if they are overworked by continued irritation, or perhaps injured by chemical, mechanical, or other action (including that of parasites as a possibility), they lose their powers of development into highly specialized normal cells with a coordinated function and revert to a condition that is more primitive or atavistic, characterized by multiplication more rapid and less coordinated with the surrounding normal cells of their tissue, and by their ability to live and multiply when removed from their tissue and transplanted to another in metastasis or in experimental transplantation; and their irregular shapes and sizes and karyokinetic figures and tendency to degeneration show that this reversion is pathological. We must remember that each cell in the body is descended from a unicellular organism, similar perhaps to an ameba; and how much of the ancestral potentialities for living an independent existence remain as a foundation on which are built up the more specialized potentialities for living a highly organized community life with the other cells in the tissues that go to make up the organism, we do not know. That they must retain some of these primitive ancestral qualities we know, because they exhibit them in tumors and in the fact that tissue cells can be kept alive apart from the body, *in vitro*. That they retain all of them is unlikely. Apparently, the latent cells of the tissues stand somewhere between the ancestral free-living unicellular organism and the fully specialized mature tissue cell. They are prob-

ably fully differentiated as cells of their respective tissues, because the cells of tumors can practically always be recognized as belonging to the tissues from which they originate; they are not "embryonic" in the sense of being entirely undifferentiated, like the germ cells; and in an epithelium, for instance, the lower layer cells that regenerate the tissue are obviously not mature epithelial or gland cells. As they move forward from their places in position in reserve to take their places as fully developed cells they undergo a development the stages of which we can in some cases actually see, as, for instance, in a stratified epithelium, losing, no doubt, some or all of their still persisting primitive potentialities and acquiring more specialized ones. Now, if at this time, their development is arrested—if the intracellular mechanism fails, due perhaps to being overworked, or to some mechanical or other injurious influence (it might be just a primary or "accidental" failure of the intracellular mechanism of a single cell, in which case the tumor would consist of the descendants of a single cell, as no doubt some tumors do, as is suggested by the wedge shape of certain epithelial tumors)—they are set loose in a half-baked condition. They are not fully enough developed to fulfill their specialized functions as mature tissue cells, nor do they retain enough of their primitive nature to be able to live as normal unicellular organisms. But they undergo a partial reversion to the atavistic free-living condition, with the results that we see in tumor cells; and their failure to adapt themselves to this mode of life completely is shown by their pathological irregularities of shape and structure and manner of division, and by their degeneration. It may seem strange at first sight that an arrest of cellular development can result in more rapid multiplication of a cell, but when we consider that the normal development of the tissue cell consists essentially in the loss of its primitive generalized powers (and that the power of multiplication is one of the chief among these), and the conversion of these primitive powers into or their replacement by other powers of a more highly specialized nature (the red blood cell, for example, loses even its nucleus), then we realize that more rapid multiplication is to be expected as a result of arrested cellular development, at least until the pathological factors result in degeneration.

NORTH STREET AND WARD'S LANE.

THE ETIOLOGY AND TREATMENT OF "SPANISH INFLUENZA"

BY CAPTAIN OWEN PAGET, M.D., A.A.M.C.,

MONTEVIDEO CAMP (AUSTRALIAN), WREYMOUTH, ENGLAND.

So many theories as to the origin of this disease have been put forward that it may be as well to propose a fresh hypothesis, even though its consideration is still in the early stages. I am the more inclined to do this as such hypothesis adds confirmatory evidence to my theories on tubercu-

losis, and, in addition, supplies an efficient method of treatment.

In charge here of the tuberculosis wards, I had during the last epidemic of influenzal pneumonia a ward full of the latter cases, in which I was much interested.

My treatment was guided by the recommendations in the medical journals and by my personal experience, and my results were as bad as in other centers. In other words, the patient recovered as a result of his own vitality, which was very little, if at all, enhanced by the treatment he received. Clinically, the seats of infection were—

(1) The tonsils, (2) the lungs, (3) both pharynx and lungs. A case infected in the pharynx alone often recovered within 48 hours, under aspirin.

The expressions of the disease in the lungs were various. Perhaps bronchopneumonia predominated, but true lobar pneumonias and pleurisies occurred.

A very common phenomenon was the absence of physical signs, especially in the early stages. This feature of pneumonia I had noticed many years previously in epidemics of pneumonia occurring in Australia concomitantly with our dust storms. The virulence of this Australian influenzal pneumonia is not high, probably on account of the low vitality of bacterial life there, due to the heat and sun-

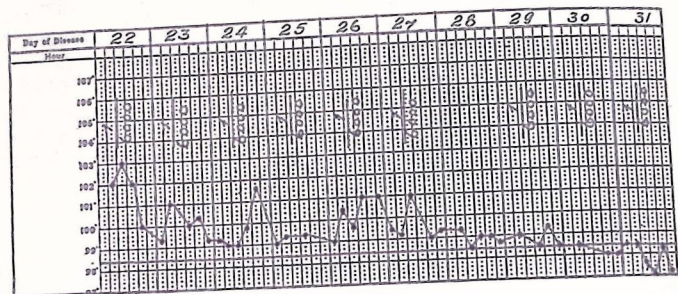


CHART 1.—Private K.

shine and the high vitality of the people, as the result of an open-air life and quantities of nourishing food, especially meat.

The mortality in these Australian epidemics is quite insignificant, and my researches into the matter were little more than observations. I formulated, however, to myself the possibility that they were epidemics of tuberculosis, and was influenced in this direction by the long subsequent loss of tone in many of the cases.

In spite of the frequency of hemoptysis, the intense virulence of "Spanish influenza" led my mind away from tuberculosis, and I waited patiently for some dictum from the bacteriologists as to what was the invading organism. During this period of vacillation I noticed one point of great interest, namely, that my cases under treatment for tuberculosis were apparently immunized against the influenza. The wards were contiguous, and the easy nature of the Australian made the probabilities of contagion certain. Instead, however, of my tuberculosis patients becoming seriously ill, the few cases affected were of so slight a character as to require at most 48 hours rest in bed; and this at a time when influenza was raging in the camp and attacking the sturdiest with the utmost virulence.

One other point was the complete absence of coryza in patients admitted to hospital with influenza. A cold in the head was apparently some protection against an inflammation of the lung.

Finally, when on leave, I interviewed Messrs.

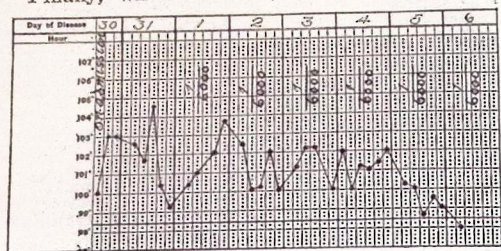


CHART 2.—Private S.

Parke, Davis & Co., with the request that they would prepare me bacillary emulsions of pneumococci, Pfeiffer's bacillus and *Micrococcus catarrhalis* on the same lines as tuberculin B. E. is prepared. This they kindly promised to do, but informed me that it would have to be done in America and that it might be two months or more before I could obtain delivery.

My object in seeking these preparations was to employ them as nasal insufflations on the ethmoid, in the same way as tuberculin B. E. is used by me in the treatment of tuberculosis. In the meantime one of my patients developed a typical hectic temperature, with absence of resolution in the chest. Major Barton, who was called in to see the case, explored with a needle in many places, but could find no pus, and it seemed very probable that the case was one of tuberculosis following influenza. This case (Sergt. H.) was treated by my methods of insufflation of tuberculin B. E. with immediate success. Subsequently tubercle bacilli were found in his sputum in large numbers.

I was so impressed by the result in this case, that the patient (Pte. C.) in the next bed, who was in a condition of partial resolution, was placed under the same treatment and with the same happy result. Unfortunately his sputum was not examined for tubercle bacilli before it had dried up.

My interest aroused by what appeared to be very brilliant results, I still merely regarded these cases as tuberculosis, subsequent on influenza, and I con-

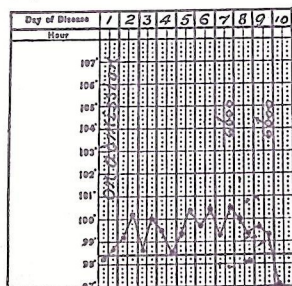


CHART 3.—Private T.

tinued to treat other cases on general lines, determined, however, to employ my own methods if the cases developed seriously. The next case to be treated was later on handed over to Major Barton as an empyema.

By this time I was beginning to suspect that "Spanish influenza" was in reality acute tuberculosis, and I therefore selected two cases with the disease in an acute ethenic form, and both of them patients of robust physique, and therefore not

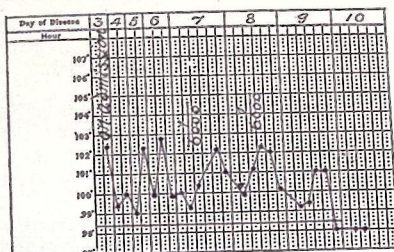


CHART 4.—Private K.

likely to be suffering from previous tuberculous lesions. These cases (Pte. K. and Pte. S.) show in a remarkable manner the beneficial effects of insufflations. Pte. K.'s sputum was found on examination to be full of tubercle bacilli.

In the meantime, Capt. Black, who was now in charge of most of the influenza cases, had sent a patient (Pte. G.) to the tuberculosis ward as a positive case. The effect of insufflations on this patient's temperature was not so well marked, as I intentionally gave him a larger dose, namely 1/500 mgm., than was necessary. To this the little rise in temperature was probably due, although his general condition was distinctly improved. This giving of a larger dose than is directly beneficial is sometimes employed by me to estimate the virulence of the attack. Though it is harmless, when carefully employed, I do not recommend it as a common procedure.

A matter which may be remarked on at this juncture is the extraordinary variation in virulence of tuberculin preparations. They require a true standardization.

During Capt. Black's absence on leave I took over his influenza wards for a couple of days. Selecting the three worst cases (Ptes. T., K., and R.), I placed them on insufflations, with results as shown on the accompanying charts, 3, 4 and 5.

On studying my cases, the mind tends to form the following hypotheses:

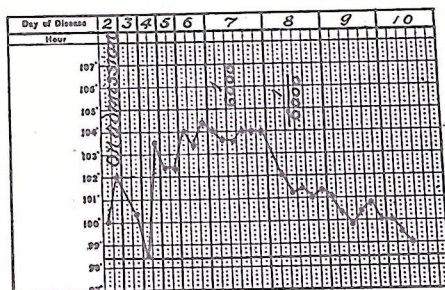


CHART 5.—Private R.

(1) Spanish influenza easily awakens latent tuberculosis. (2) Spanish influenza is an epidemic of acute tuberculosis. Whichever, if either, of these hypotheses is correct, I have no hesitation in saying that insufflations of tuberculin B. E. are a

most potent remedy against this disease, and one I shall always employ in cases which do not show resolution in 48 hours.

It has to be borne in mind that possibly the production of antibody in the ethmoid sinuses can be stimulated by tuberculin bacilli emulsion against some entirely different organism. Conflicting this argument is the abundance of tubercle bacilli found in some of my cases.

A brief résumé of the cases mentioned:

Sgt. H.—On admission, headaches, shivering, and cough. Developed pneumonia right upper lobe; later on right base also affected. Tubercle bacilli in sputum.

Pte. C.—Pneumonia left base; later, pneumonia right base. Nov. 16 aspirated 28 oz. left side; Nov. 30 aspirated 30 oz. same side; Nov. 26, dullness left side much diminished. No sputum for examination.

Pte. G.—Chest clear. No physical signs. Admitted with headache, pains in legs, cough. Tubercle bacilli in sputum.

Pte. K.—Pharyngitis. Scattered crepitations in chest, but no definite physical signs. Tubercle bacilli in sputum.

Pte. S.—Weak breath sounds and crepitations at bases. Free hemoptysis.

Ptes. R., T., and K.—Spanish influenza.

SEBORRHEIC ECZEMA OF THE LOWER LIP, WITH DEEP CENTRAL CRACKING.

By DOUGLASS W. MONTGOMERY, M.D.,

AND

GEORGE D. CULVER, M.D.,

SAN FRANCISCO, CAL.

ON June 29, 1918, a stenographer, twenty-four years of age, called on us on account of an affection of the lower lip.

She said that a crack had appeared in it in the present situation eight years previously, and had never perfectly healed.

There was present a deep crack exactly in the median line of the red of the lower lip. This crack extended through the mucous membrane and invaded the cutaneous portion of the lip for a further couple of millimeters. It had rolled edges, but no induration indicating malignancy could be made out. There was scaliness along the whole exposed mucous membrane of the lip just above the mucocutaneous border. The lesion was most annoying. The crack was painful when open, and it would crack open on the least stretching of the lip, as in laughing, so that the patient was constrained to hold the mouth in a peculiar way in order to avoid this accident. This caused a disagreeable alteration of the expression of the whole countenance. It also gave a slightly affected tone to her speech through interference with pronunciation.

The patient was taking too much sugar and too much milk fat, and her occupation as a stenographer caused her to have a meager oxygen intake. She therefore did not burn well these carbohydrates and milk fats, and consequently had a flatulent dyspepsia, which would naturally increase the delicacy of her mucous membranes, and render them more susceptible to infections and to lesions such as cracking.

She slept restlessly, was under weight, and although only twenty-four years of age was rapidly growing gray. She was not constipated, an unusual circumstance with stenographers.

It was concluded that either x-rays or radium, because of their action on seborrheoids and on deep, indurative, inflammatory processes, offered the best means of treatment. As the rays of radium are only about half the wave length of x-rays, and much more deeply penetrative, it was concluded to use them in preference to x-rays. It was also concluded to shield very heavily in order to exclude the longer wave lengths and to secure the deeper action with less superficial reaction.

A normal plaque containing 11 mgm. of radium substance was screened with brass 0.80, aluminum 0.01, and one layer of writing paper, and held in place for half an hour.

A salve was prepared consisting of:

R Liq. alumini acetici.....℥ x
Lanolini
Cerat. simp. āā.....℥ ss.
M., Sig: Apply frequently.

General hygienic and medicinal measures were also taken to improve her health and to increase her resistance, for it may be confidently assumed that these cracks are always infected with streptococci.

By August 13, 1918, the lip was entirely healed, leaving a slight scar in the skin just below the mucous membrane, where the crack had invaded the skin. The expression of guarded tension had not, however, yet left the mouth. Another application of the radium was made, screened in the same way and applied for the same length of time.

By October 14, 1918, the expression of the mouth was normal, and the healing appeared to be perfect.

On the date of this report, February 11, 1919, seven months after the patient first consulted us, and about six months after complete healing, a small scar is still visible where the original crack was, but there are no other objective or subjective symptoms of her trouble.

This seems to us an excellent example of the beneficial effects of radium in these obdurate cases, which are also so dangerous because of their threat of epithelioma.

323 GEARY STREET.

Grippophobia.—Anglade relates the case of a woman of 40 who developed a phobia concerning the grippe against which she could not possibly react. Despite this fact, the woman had previously shown courage in nursing children with diphtheria. For the past three months or during the period of the epidemic in her vicinity she had no other thought than the existence of the latter and was constantly gargling her throat and spraying her nose. She would not allow any one to approach her. She recovered her mental state, probably after the passage of the epidemic, but it is very likely that it will return with the next outbreak of the same affection, as recurrence of this type has been noted in such cases. Verger stated that nosophobia was apt to be aroused by the pandemic and cited a case in which a case of grippophobia developed in a woman who had once suffered from phthisiophobia. She was a shopkeeper and actually closed her shop for the period of the influenza. Anglade also cited a case of extreme lyssophobia in which the woman finally passed into a state of melancholy with crises of delirium.—*Journal de Médecine de Bordeaux*.

Medicolegal Notes.

Unprofessional Conduct in Prescribing Drugs.—In a proceeding at the instance of the Rhode Island Board of Health for the revocation of a license to practice medicine (which was previously before the court in *Knoop v. State Board*, 102 Atl. 609) twelve witnesses were produced by the State, the majority of whom testified that they had obtained numerous prescriptions for morphine and cocaine from the defendant; that no physical examination of any kind was made by the doctor before prescribing the desired drug; that they stated the amount of morphine which they were accustomed to use, and upon payment of the fee charged they were given a prescription to start with, usually for 60 grains, and were told that they must go for as long a time as possible before returning for another prescription, and that the amount of the prescription would be reduced each time a new one was called for. The wife of one patient was a robust, healthy woman, who did not use drugs at all, but, acting by direction of her husband, she became a patient of the defendant and secured a number of prescriptions of morphine, nominally for her own use, but in reality for the use of her husband and a friend of his. The Rhode Island Supreme Court, on appeal from a decision of the State Board of Health revoking the license, was satisfied that in the case of this woman and in certain other cases no examination of the patient was made before the prescription was given. The so-called treatment of these patients was the same regardless of their physical and mental condition, past history or environment.

"In numerous cases," the court said, "the patients by paying an additional fee secured prescriptions for cocaine also. The excuse for using this given by the patient was that the cocaine relieved the pain caused by the needle when the morphine injection was taken. The appellant says that the cocaine was prescribed in one case for neuralgia or neuritis, and in other cases to relieve the patients from constipation, one of the common results of drug using. Neither explanation is convincing. The patient undoubtedly wanted the cocaine to satisfy the craving for drugs. The cocaine habit is as well recognized by the medical profession as the morphine habit, and, as stated by one of the medical witnesses in regard to this particular subject, it does not seem fair for the sake of relieving the ailments above mentioned to take the risk of fastening an added drug habit upon a patient who is already a victim of the morphine habit. Whenever a cocaine prescription was written an extra charge, usually \$1, was made in addition to the customary charge of \$2.

"The appellant claimed that the treatment given to these patients was given in good faith and in accordance with recognized medical practice of 'cure by reduction.' Testimony was given in regard to this form of treatment to show that the method was to decrease regularly and continuously the amount of the drug taken by the patient and to deprive the patient of the drug entirely as soon as feasible. It appears that this method has been used with more or less success when applied in institutions where the patient was under the constant observation and continued control of the physician, when the amount of each dose could be regulated by the physician and not by the patient, and that in some cases it had been used with success outside of an institution when the patient was possessed of strong will power and a fixed determination to be cured, but, if the patient was lacking either in the necessary will power or the desire to be cured, that this treatment would be of no avail. One of the physicians who testified on behalf of the appellant testified very frankly that he would not undertake the treatment outside of an institution of an addict who did not desire to be cured, for the obvious reason that it would be useless.

"In the case at bar the appellant continued to treat a number of these addicts when he knew, according to his own testimony, that they did not desire to be cured, that they were getting drugs from other sources in addition to the amount prescribed by him and had secured prescriptions for additional amounts from him on their false statements that they had lost a part

of their weekly supply. . . . That he [the appellant] did not expect to cure his patients is made clear by his own testimony, when he was recalled to the witness stand after other witnesses had testified in regard to his method of treatment. The appellant then admitted that he did not expect to cure his patients, that the only practical way of effecting a cure would be by placing them under control in some institution, and that his object was to give his patients a sufficient supply of the drug to enable them to continue their usual occupations.

"This particular testimony requires no extended comment. Such treatment for such an avowed purpose is illegal and unprofessional. One of the objects of the Statute (Chapter 178 of the Gen. Laws, 1909) is to prevent drug addicts from securing the desired drug and thereby enabling them to continue the drug habit. The Legislature recognized the necessity of making some provision for these unfortunate people and in a proper case permitted physicians to prescribe morphine, etc. Such treatment, however, must be in accordance with the recognized practice of medicine, the object of which, in cases wherever it is possible, is to effect a cure.

"The procedure followed by the appellant neither cured the patient nor was it adapted to cure him. So long as the patient was able to procure his supply of the drug he would remain a drug addict. The treatment of the appellant was directed principally with the purpose of securing the fees which his patients paid to him in order to secure the desired prescription, and the conclusion from the testimony is irresistible that whatever reductions were made in the amount of the drug prescribed were due more to a desire on the part of the appellant to escape a prosecution for violation of the law than to any expectation on his part of effecting a cure of said patients, or of securing for his patients any permanent benefit." The finding of the State Board of Health revoking the appellant's certificate was affirmed.—*Knoop v. State Board of Health*, Rhode Island Supreme Court, 103 Atl. 904.

Expert Opinion.—In an action for injuries to a child a medical expert testified that "the skull consists of two tables of bone, with a spongy bone between the two, and sometimes a fracture may extend further on the inside than it does on the outside. Of course a fracture of that kind cannot be seen." This was objected to as regards what might possibly be underneath, the objection being to the witness testifying to anything he did not know. The answer was held to be clearly within the realm of proper expert testimony, and if it were otherwise the error was rendered harmless by the witness' subsequent assurance that he did not know whether or not the fracture extended into the motor area of the brain.—*Ahouen v. Hryszko*, Oregon Supreme Court, 175 Pac. 616.

Liability of Private Hospitals.—In an action against a private hospital by a patient for damages because of pneumonia, alleged to have been caused by a heavy rain penetrating a leaking roof, the Oklahoma Supreme Court holds that the rule is well settled that, when a hospital is being conducted for private gain, it is bound to exercise that degree of care toward its patients, measured by the capacity of such persons to look after and provide for their own safety, as an ordinarily prudent person would exercise under like circumstances and conditions. The rule laid down in *Hogan v. Clarksburg Hospital Co.*, 63 W. Va. 84, 59 S. E. 943, is as follows:

"There can be no question about the liability of a hospital which is being conducted for private gain and not for charitable purposes, for damages to its patients through the negligence of its officers and employees. . . . It is the duty of such hospital to employ only competent physicians and nurses, and to treat such patients with such skill and care as ordinarily obtains in the conduct of such institutions, and to protect its patients in such manner as their condition may render necessary, and such degree of care and diligence should be in proportion to the physical or mental ailments of the patient rendering him unable to look after his own safety."—*Tulsa Hospital Assn. v. Juby* (Okla.), 175 Pac. 519.

Military Medicine.

Sanitary Aspects of Warfare in Southeastern Europe.—The war now practically over, in spite of the immense size of the armies engaged and of the magnitude of the operations conceived and carried out, has been distinguished from the medical point of view perhaps chiefly by the triumphs of preventive medicine. However, this statement must be made with a certain amount of reserve. While it is absolutely true that disease on a large scale was successfully prevented on the Western Front, with the exception possibly of influenza, on the Eastern Front prophylaxis was less satisfactory. The Russian and Serbian armies were decimated by disease and even the French and British armies in the near East and in Southeastern Europe were, at one time, and at a somewhat critical time too, almost incapacitated by diseases of various kinds, mainly insect borne. It must be borne in mind that the part of Southeastern Europe in which the Anglo-French armies were stationed is notoriously unhealthy. A large portion of it is infested with mosquitos and rife with malaria. At the time of the coming of the Western forces drainage of the large areas of swampy lands was lacking and in addition to anopheles mosquitos various other insects abounded. The inhabitants lived in an extremely primitive way, sharing their houses with their fowls, pigs, cattle, and horses, the consequence being that lice, fleas, and bedbugs were almost as numerous as the sands of the sea shore.

Professor W. J. R. Simpson, writing regarding sanitary conditions in Southeastern Europe during the war, in the *Transactions of the Society of Tropical Medicine and Hygiene* for October, 1918, gives a vivid account of the difficulties with which the British medical corps had to cope in Macedonia. As for the domestic insect pest, he states that many of the patients admitted to hospital, sometimes suffering from malaria, were so abundantly covered with flea-rash that unless carefully examined the impression was conveyed that they were typhus fever cases. The water supply in many places, especially in those near the foot of the hills, is good, owing to its origin from springs, but wherever there are wells, they are polluted with filth; canteens, kitchens, and wells are usually close together. There is much dysentery among the civil population, both bacillary and amebic, the former being the most prevalent, but the two diseases which bulk the largest are malaria and tuberculosis.

By the time Monastir was taken by the Serbs and French in November, 1916, and the British were fighting in the Struma Valley, the toll of sickness from malaria, sand-fly fever, and dysentery had been enormous. The British troops, perhaps, suffered in a less degree than the French, except in the Struma Valley, where all the regiments were more or less affected, some worse than others. It is not surprising that the name which the allied armies received was the "Phantom Army." For example, a regiment entered the Struma Valley 900 strong. In six weeks there were only 200 left not in hospital.

The paper by Simpson shows clearly that South-

eastern Europe is an unhealthy area for warlike operations, and that though disease has fallen very heavily on the armies of these countries who do not pay the same attention to hygiene that the British pay, yet in this war the Gallipoli and the Salonica experiences demonstrated that the sanitary organization and measures which have been so effective in France have not been sufficient for armies operating in countries where malaria exists, and where the sanitation is in a very primitive condition. This state of affairs as regards the preventive side of disease in the British armies, as distinguished from the hospital and curative side, is emphasized also by what happened in Mesopotamia and Egypt. It appears to Simpson that the British sanitary service for campaigns in tropical and sub-tropical countries must be submitted to a thorough examination and must be reorganized on a very different basis. These views, he thinks, can be held without in any way diminishing the importance and magnitude of the work done by the British sanitary service in France. The results are written large in the health conditions of the army there. The reason for Simpson's views is that the conditions under which the armies were operating were different, so that what was found adequate for the West was not so for the East nor for the Tropics.

The chief requisite of efficient sanitation and hygiene in tropical and sub-tropical climates is first and foremost to eradicate the insect pest so far as is possible. So long as insects, the hosts and conveyors of many diseases, abound, just so long will these diseases flourish. While the eradication of insects on a wide scale is the most important step in the direction of conquering tropical diseases, another essential movement forward is to improve sanitation, and domestic hygiene in particular, in tropical countries. The war in the East has shown what can be effected by judicious sanitary and hygienic measures and the knowledge there gained should be put into practice wherever necessary.

Health of the Army.—According to the statistics made public on February 13, there are about 82,539 sick and injured soldiers remaining overseas. Of these 19,966 were listed as suffering from injury and 62,573 from disease. This was a reduction of about 60 per cent. as compared with the figures of November 14, 1918. A report from the War Department, Washington, under date of March 7, states that the health of the troops in the camps of this country continues very good. A recrudescence of influenza and pneumonia was noted at Camp Taylor, Ky. It is also announced that the crest of the tide of returning sick and wounded soldiers has been passed. The War Department has tried consistently to send the sick and wounded to hospitals as near their homes as possible but the requirements for proper hospital attention have made the situation difficult and many men have had to be retained at debarkation hospitals in or near New York.

Doctors Consult by Wireless.—Physicians on the transports *Sierra* and *Powhatan*, which reached the port of New York on March 6, held a consultation by wireless telephone while the ves-

sels were fifteen miles apart at sea in regard to influenza cases on the *Powhatan*. Lieut. Commander A. E. Younie, senior surgeon on the *Sierra*, also diagnosed the ailment and prescribed treatment by wireless telegraph for a sick man on the British steamship *Pollac* which was one hundred miles distant. Lieutenant Commander Younie is reported as saying that the wireless telephone opens a wide field for the medical profession, since most ships of our merchant marine will not carry surgeons but the captain of such a vessel will always be able to obtain medical services either from shore or from some other ship.

Army Quits Long Beach Hotel.—Army General Hospital No. 39, at Hotel Nassau, Long Beach, L. I., is to be abandoned. Surgeon General Ireland announces that the institution will be cleared of patients and personnel by March 15.

Many Disabled War Veterans Take Vocational Training.—The Federal Board for Vocational Education, in a report on its activities for 1918, shows that 12,000 American soldiers, sailors, and marines, disabled in the war, have been registered as prospective candidates for vocational education.

Many Sick and Wounded Reach Port.—During the week ending March 8 some eleven troopships reached New York, bringing an influx of 4,100 sick and wounded. On the *Leviathan* there were nine convalescent detachments, comprising 1,179 war victims in charge of 56 nurses. The *Santa Marta* from Brest brought forty-five medical officers and thirty-five nurses, among whom were included a number of the members of the Mount Sinai (New York) Hospital Unit.

First Lieut. Abraham F. Thomas, of Newburyport, Mass., attached to Ambulance Company No. 1, Second Division of the Regular Army, A.E.F., has been awarded the Croix de Guerre for distinguished service in the face of the enemy during the battle of Blanc Mont Champagne sector from October 1 to 10, 1918.

Capt. Conrad Wesselhoeft, M.C., U. S. Army, of Boston, attached to the 104th Infantry, was awarded the distinguished service cross and also the Croix de Guerre for his services in caring for the wounded under fire.

Hospital Units to Return.—An announcement made by the War Department on March 3 states that Base Hospitals Nos. 11, 34, 38, 52, and 58, Convalescent Camp No. 2, and Evacuation Hospitals Nos. 2 and 4 have been assigned to early convoy.

Deaths in the Service.—Lieut. EDWARD SARTOR STEWART, M.C., U. S. Army, of Summertown, Tenn., a graduate of Vanderbilt University, Nashville, in 1911, died at Camp Greenleaf, Ga., from lobar pneumonia, on October 13, 1918, aged 32 years.

Lieut. RALPH EDGAR POWERS, M. C., U. S. Army, of Akron, Ohio, a graduate of the Eclectic Medical Institute, Cincinnati, in 1915, died from wounds received in action while on duty with the American Expeditionary Forces on January 22, aged 28 years.

Capt. GILCHRIST BRIGGS of the American Volunteer Ambulance Corps, died, on March 2, at his home in Schenectady, N. Y., aged 54 years. He was graduated from the Albany (N. Y.) Medical

College, in 1889, and during the war served with both the British and French armies. He was awarded the Croix de Guerre for removing French wounded from the zone of fire during the battle of Verdun.

Capt. JOHN D. HESS, M.C., U. S. Army, of Clarkston, Mo., a graduate of Washington University, St. Louis, in 1900, died from pneumonia while on duty at Fort Bliss, Texas, on October 17, 1918, aged 41 years.

Major JOSEPH JAMES KINYOUN, M.C., U. S. Army, of Washington, D. C., a graduate of Bellevue Hospital Medical College, in 1882, died of lymphosarcoma of the neck at his home in Washington, on February 14, aged 58 years. He was a surgeon in the U. S. Marine Hospital Service from 1886 to 1902, professor of hygiene and bacteriology from 1890 to 1892, and of pathology and bacteriology from 1892 to 1899 in Georgetown University, Washington, D. C. He was decorated with the Order of Bolivar in 1897 on account of his excellent sanitary services to the Republic of Venezuela. He was a member of the Association of American Physicians, the Association of American Bacteriologists, and American Public Health Department of the District of Columbia. He was founder and first director of the United States Hygienic Laboratory, and director of the H. K. Mulford Laboratories from 1902 to 1907. He was on duty at the cantonments of North and South Carolina until December 6, 1918, when he was detailed as pathologist to the Army Medical Museum.

Capt. JAMES WILLIAMSON SQUIRES, M.C., U. S. Army, of Charlotte, N. C., a graduate of the North Carolina Medical College, Charlotte, N. C., in 1911, died from lobar pneumonia in the U. S. General Hospital at Toul, France, on December 16, 1918, aged 30 years. He was professor of rectal diseases in his alma mater.

Capt. AARON SHINER OBERLY, Med. Dir., U. S. Navy, retired, of Avon, Conn., a graduate of the Medical Department of Yale University, in 1860, died at his home, on February 15, aged 81 years. He entered the Navy in July, 1861, serving throughout the Civil War. He was made chief surgeon of the Adriatic in 1886 and was retired after ten years and six months sea service, on January 4, 1889.

Lieut. BEDFORD WAGONER RUSSELL, M.C., U. S. Army, of Strong City, Okla., a graduate of the Epworth College of Medicine, Oklahoma City in 1909, on duty at Fort Riley, Kan., died from the effects of influenza at the home of his mother in Oklahoma City, on February 13, aged 31 years.

Major CLARENCE EWEN, M. C., U. S. Army (retired), a graduate of Bellevue Hospital Medical College in 1862, died at his home in Washington, D. C., on January 6, aged 75 years. He was assistant surgeon of the New York State Volunteers in 1862; assistant surgeon of the 102d United States Volunteers in 1862 and 1863; acting assistant surgeon, United States Army, in 1864; assistant surgeon of the United States colored troops in 1864 and 1865; and acting assistant surgeon, United States Army, in 1868. He was promoted to major in 1889, and was retired at his own request after thirty years of service.

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EPIDEMIC INFLUENZAL ENCEPHALITIS.

THE occurrence in Chicago of some cases of narcolepsy or lethargic encephalitis, which the newspapers call "sleeping sickness," dependent upon influenza, was doubtless to many the first intimation that encephalitis is a known complication or sequel of the grippe. The claim that this affection occurs with or in the wake of the influenza epidemic has indeed been made, but such disease association does not apparently manifest itself in all countries ravaged by the latter. Nor does encephalitis occurring in the course of infections always impose itself as a lethargic affection. Polioencephalitis, in general, may or may not be associated with narcoleptic crises and somnolence. There is evidence that the study of this clinical and pathological entity may possibly lead to the discovery of a new nervous center, which, when implicated in an infection, or even functional disturbance, may cause phenomena which suggest narcolepsy, sleeping sickness, catalepsy, or other clinical syndromes.

Molinari, writing in *La Riforma Medica* for February 1, asks two questions which he seeks to answer: "Is this affection new?" and "Is it autonomous?" In regard to the first query, he refers to the affection known as "noma," which followed in the wake of the pandemic in 1889-90. In the spring of 1890 the newspapers of the Continent were filled with reports of a new disease called noma, or sleeping sickness, which had broken out in Italy, and which it was feared would invade the rest of Europe. It was soon recognized as a comatose form of influenza, and it was subsequently traced through a large part of Europe, and even reached the United States. An epidemic of "sleeping sickness" swept Europe in 1740, in the short interval between two visitations of the grippe, and may readily have been connected with cases left over from the 1737 epidemic. In 1900, Bozzolo found two sporadic cases in Italy which paralleled closely the sleeping sickness of the African negro, but careful study showed that it was presumably affiliated with influenza, at that time, of course, only endemic.

In regard to the question of autonomy, it was at first regarded as a not fully developed form of cerebrospinal meningitis, and it is even now found very difficult to distinguish the affection from the

encephalic form of acute anterior poliomyelitis, which has a protean sweep of clinical manifestations. Authorities like Netter, however, remain dualists. Another problem is the connection, if any, between infection of the rhinopharynx and encephalitis.

THE PRACTITIONER OF THE FUTURE.

IN the past decade there have been signs of impending change in the science and art of medicine. Drug therapy has been subjected to a good deal of criticism and ideas as to the value of drugs have undergone more or less revision. This alteration in the attitude of a goodly proportion of the medical profession was due, to some extent, to the manner in which drugs, most often of German origin, were continually being brought out for the treatment of every kind of disease, but was owing more largely to the fact that despite advances in pharmacological knowledge, medical men were conscious that many drugs were given without any certainty as to their value and without definite knowledge of their mode of action. While there are not a few drugs which by the test of experience have shown themselves to be of therapeutic value and of which little is otherwise known, there are many new drugs of which little is known concerning either their mode of action or their value. When long experience has demonstrated the usefulness of a drug, it is right to recommend it, even if the why and wherefore of its action are not known. On the other hand, when knowledge is lacking as to why a drug acts as it does act and when it has not come through the clinical test with satisfaction, then it seems assuredly wise either to discard such a drug or not to recommend it until further investigation has proven its efficiency.

However, the drug problem, that is, to know what kind of drug to give and when, is not the only one that confronts the medical profession and calls, if possible, for solution. It must be borne in mind that the methods of practising have changed vastly during the past fifty years. This is the age of the specialist and of laboratory research. With regard to laboratory research, Sir James Mackenzie, writing in Vol. 1 of "Oxford Medicine" on the future of medicine, points out that the methods of investigation and the type of individual who prosecutes research have altered during the past fifty years. Before that time the investigator was a man engaged in medical practice, who, recognizing in his patients problems that needed solving, sought their solution by experiments conducted by himself or under his supervision. This was the method pursued by such men as Harvey, Hunter, Jenner, and Lister. All this has been changed and research work has passed almost wholly into the hands of the laboratory worker, and to laboratories are attracted many of the most brilliant and able of the younger members of the medical profession. The view is becoming crystallized that by laboratory work alone can medical research be advanced and thus other means of investigation are ignored.

Mackenzie, while acknowledging that laboratory investigation has done great service in forwarding the progress of medicine, is yet convinced that the method possesses certain inherent defects. He is of the opinion that underlying all the seemingly reasonable belief in laboratory research there exists a fallacy. Investigators are now specially trained for their work under men who have spent their lives in the laboratory. Consequently the pursuit of knowledge tends to assume ever more and more an academic character, with little reference to the problems confronting the doctor who practises medicine. This is in contrast with the methods pursued by the great pioneers whose names are mentioned above. Laboratory workers now get a limited view of disease, and it must be recognized that their opportunities permit them to see but a very small part of the field of medicine. This is to say that the pure laboratory investigator is merely an investigator and nothing more. The old time investigator was generally a man in general practice, as Jenner, for instance, or as Mackenzie himself, who was deeply skilled in clinical diagnosis and learned to investigate with human material and in a field far wider than the up-to-date highly scientific investigator. The results, too, were eminently satisfactory.

Moreover, as Mackenzie shows, the reaction of these views upon medical practice is seen in the breaking up of clinical medicine into a series of specialities. Diagnosis of any case which appears to be at all out of the common is not now attempted by one man but a number of specialists. The patient may be sent from one consultant to another, each of whom sends in a report dealing with the organ or method in which he specializes, and then the original physician studies these reports and is supposed to be in a position to treat the case properly. The method is impressive, and, needless to say, costly, but in reality there is more than one rift in the lute. In the first place, it is almost out of the reach of all but the wealthy, and even if institutions under government were started only a limited number of persons could be treated.

The most damaging criticism that Mackenzie directs against the ultra specialist institutional system of dealing with disease is that the cases in the early stages would not be sent, and, if sent, their ailments would probably not be recognized, for the phenomena created by the early stage of the disease are not revealed by mechanical means or laboratory methods.

The point must never be lost sight of that the effect of disease is rarely limited to one organ; in many cases the change in one organ is secondary to conditions elsewhere. Some specialists whose horizon is restricted to their particular subject are not always capable of recognizing the remote causes and effects. Also, the physician whom the patient first consulted, implied by the very fact that he had to call in help that he was not able to detect the phenomena produced by the disease, and, as Mackenzie pertinently asks, if he was not capable

of finding them, how could he be qualified to assess their value?

The writer enters somewhat fully into the question, and emphasizes the need of an urgent call to the clinical investigator to view his position from a standpoint different from that to which he has been accustomed. There is a great field still unexplored for the detection and for the assessment of the value of symptoms recognizable by the unaided senses, or by simple mechanical aids. The class of investigators must be enlarged to include those who have the opportunities of seeing disease in its earliest stages, and the clinician must take a part in the laboratory investigations in order to solve the numerous problems that will arise if he sets himself to find out the significance of the signs of the disease. In the medicine of the future, the laboratory investigator, pure and simple, will not hold the predominant position he now holds, if the advice of this British investigator is ever followed. Indeed, his importance will be subordinated to that of the clinician who interests himself in laboratory investigations. Neither will the specialist reign as supreme as he reigns at the present time. Both the laboratory investigator and the specialist will, of course, play their part, but the all-round man of practical experience will surely come into his own again.

THE PATHOLOGY OF CHELOID ACNE OF THE NECK.

CHELOID acne has been described by Lenoir and Vidal as a pilosebaceous perifolliculitis with a cheloid tendency, the structures surrounding the follicles tending to the formation of a sclerous tissue instead of progressing to suppuration as in ordinary folliculitis. Some time later, Dubreuilh described the presence of giant cells. The lesions commence first in the sebaceous gland, the cells of which assume the aspect of giant cells, and secondarily, the lesions progressively extend and end in the formation of a follicular abscess. Therefore, originally the lesion is an acne and not a folliculitis, since the first lesions arise in the sebaceous gland, which is totally destroyed before the follicle becomes involved. The perifolliculitis secondarily provokes suppuration of the follicle on the one hand and a cheloid on the other. Dubreuilh also admits that cheloid and cheloid acne have both the same structure and are differentiated only by their respective evolutions; a true cheloid being a proliferating new growth, cheloid acne on the contrary always following an acne.

Mibelli maintains that the lesions commence by small follicular abscesses, and the presence of giant cells in the sebaceous glands should prove, on the contrary, that this lesion is secondary to the precedent. At the same time, a cell proliferation occurs around the vessels of the dermis, ending in the formation of cheloid nuclei under the influence of some pathogenic agent as yet to be determined, as well as by lesions resulting from the friction of the

clothing. Ledermann and Ullman have described the presence of eosinophile cells and certain formations which they term Russell's corpuscles. Mantegazza has mentioned the presence of plasma cells along with giant cells, while Baillon describes cheloid acne as a subacute or chronic nodular inflammation which is similar in nature to a certain number of bacterial affections, particularly tuberculosis.

Quite recently, Gouin distinctly separates cheloid plaques still presenting small active "pustulettes," which he calls "inhabited" cheloids, from adult cheloid offering no trace of infection and found in the center of the "inhabited" cheloid plaques. After having studied the pathology obtained from biopsies of four patients, Gouin and Pautrier come to the following conclusions: The areas still in activity which contain "pustulettes," and which may be looked upon as the extension zone of cheloid formations, present two types of lesions, namely, those of the pilosebaceous system and those of the intervening dermis. At certain spots the pilosebaceous lesions offer the aspect of simple folliculitis and perifolliculitis with a tendency to suppuration, but giant cells are also to be found. At other points the entire sebaceous gland is transformed into a mass of giant cells which destroy the infiltrated hair. In the intervals between these foci of pilosebaceous lesions, examination shows that the dermis is sclerosed and forms meshes filled with foci of infiltration almost exclusively composed of plasma cells; although giant cells may also occasionally be present.

As the evolution progresses the cheloid assumes a different aspect. The pilosebaceous system and even the giant cells disappear and there remains an almost pure plasmoma riddled by a sclerosed connective-tissue stroma. Regardless of the opinion maintained by Dubreuilh, Gouin supposes that the pathogenic agent penetrates in the first place into the pilosebaceous orifice and there sets up the formation of a pure folliculitis. At this phase of the process suppuration may sometimes occur; later on, either on account of the chronicity of the lesions or because of the low virulence of the pathogenic agent, a slow process of inflammation becomes established around the follicle, which ends in the formation of giant cells. This process reacts on the sebaceous gland and then sets up the production of giant cells within it. What would seem to prove that the evolution of the process takes place as described is that at this last phase the hair is completely destroyed and only the lesions of the dermis persist.

The differentiation of true cheloid from cheloid acne is to be made from the fact that in the adult stage the former process has the structure of a fibrous growth composed of fibrous connective tissue, containing only fixed connective-tissue cells and no trace of foci or infiltration. In cheloid acne, on the contrary, even at the stage of complete development, numerous plasmomata are always found.

UNDOUBTEDLY many surgical lessons have been learned from the war and consequently a considerable amount of progress has been made, but it may be well to point out that war surgery is in many respects a very different affair from surgery in civil life and that experience of war surgery does not fully equip the surgeon for dealing with the surgery of civil practice. The man who has been operating day after day for three or four years in operating and casualty clearing stations, is not necessarily on account of his wide experience at all times competent as an operator in civil practice. As a matter of fact, although this statement is obvious, conditions from the surgical outlook are so different in civil life that the surgeon versed in army methods will have to revise his modes of procedure considerably in order to adapt himself to civil practice. The fear has been expressed that with the return of surgeons from the seat of war, of men who have acquired great manual dexterity and who have become accustomed to the manner of operating in war hospitals, an orgy of operating will set in. Mr. C. Hamilton Whiteford, writing in the *Medical Press* for January 29, voices this view and lays down a list of surgical "don'ts," presumably for the behoof of surgeons habituated to the customs of army medical practice. These don'ts appear to be to the point and especially those which lay emphasis on the need for an aseptic environment when operating. Whiteford contends that in no circumstances should an operation be performed in a patient's house, and undoubtedly such advice is fundamentally sound, though not always practical. It is true that many valuable surgical lessons have been taught by the war, lessons which will prove of the greatest use in civil practice. Nevertheless it is timely to draw attention to the fact that peace conditions differ widely from war conditions and that this applies with equal force to peace surgery and war surgery. The progress made in surgery during the war must be adapted to meet civil conditions and not to override them.

MORTALITY IN MADRID DURING THE GRIPPE YEAR.

ACCORDING to *La Medicina Ibero* for January 4, the total number of inhabitants of Madrid is at present approximately 624,303. The number of births in 1918 was 16,672, and that of deaths 18,961. The total deaths in 1917 were 15,557. It is thus clearly shown that the balance is on the wrong side of the ledger. This is due to some extent to the prevalence of variola in 1918, which disease caused 431 deaths. It is, of course, only too evident that the chief agent in reversing the vital statistics is influenza, but to bring out the full participation of the latter we must also enumerate all of the acute respiratory disorders. The deaths set down to gripe alone are 954. The number of deaths from acute bronchitis is given as 908, which should include some bronchopneumonias. The pneumonias *per se* add up to 549 only. There are, however, nearly 2000 cases of respiratory affections in which apparently no diagnosis was made. The author gives the causes of increased mortality as smallpox, bronchopneumonia, and gripe. Since chronic respiratory diseases are abundantly accounted for, we have over

4,000 presumably acute pulmonary affections which proved fatal. It is hardly to be doubted that influenza at least trebled the normal death rate of these affections. Despite the vagueness of these figures it seems that Madrid, as the first great center of population attacked, reaped some slight benefits from the mildness of the initial outbreak and the protection afforded against recrudescences. The figures cited cover a calendar year, including the cold-weather mortality of the first months of 1918, while influenza raged in the last two-thirds of the year. Nevertheless, an increase in the deaths in one year of 3,404, of which only a fraction could be attributed to other causes, seems to speak eloquently of the deadliness of the pandemic.

News of the Week.

Another Medical College Will Admit Women.—At the commencement exercises of the New York University and Bellevue Hospital Medical College on March 3, Chancellor Brown announced that for the first time in its history this institution will admit women on the same basis as men with full privileges of the college and will grant them the degree of doctor of medicine upon graduation. Degrees were conferred at this time upon seventy students who finished their medical course three months earlier than usual owing to the war emergency program adopted last year.

Typhus Fever in Germany.—A despatch to the Associated Press, under date of March 1, states that within the week the number of cases of typhus fever in Germany rose from 144 to over 500. Of these 18 cases were reported in Berlin. It is believed that the disease was brought to Germany by troops and civilians returning from Russia.

Mount Sinai Hospital Report.—At the annual meeting of the Society of the Mount Sinai Hospital, New York, on February 3, it was announced that the construction program arranged before the war would be resumed at the earliest possible date. It is expected that the actual work on the new buildings will be begun in the spring of 1920 and that the buildings will be complete before the end of the following year. Colonel Howard Liliental, in charge of Base Hospital No. 3, the Mount Sinai Unit in France, and Major Edwin Beer told of their work in France. The unit had a very active service as many as 2,800 patients being taken care of at one time. The expenses of the hospital for the year were \$652,835, and were covered by receipts of a similar amount, \$213,388 of which was contributed by the Federation of Jewish Philanthropies. It was also reported that the experimental stage of the Cardiac Section had been passed and it had been regularly incorporated as a part of the dispensary and had been installed in quarters especially designed for it in the Children's Clinic.

Rockefeller Money for Medical Education.—At a meeting of the General Educational Board of the Rockefeller Foundation, appropriations of \$1,108,525 were made to carry on the work of various educational institutions throughout the United States, the largest amounts being given for the furtherance of medical education. Johns

Hopkins Medical School received \$400,000 for the endowment of a department of obstetrics and the Meharry Medical College, Nashville, Tenn., for negroes, received \$150,000.

Influenza in Japan.—According to the report of the Home Department officials there were in Japan during the months of October, November, and December 10,000,000 cases of influenza. This means that about one in every seven of the population has been attacked. During the three months about 80 per cent. of all deaths were from influenza.

Bolsheviki Kill Incurables.—A despatch from Stockholm reports that typhoid fever is raging with increased force in Petrograd. In one hospital 8,000 patients are said to be dying monthly. In the provinces the mortality from the disease is so high that the Bolsheviki have issued a secret order to kill the incurable cases, hoping thus to stop the spread of the contagion in some measure. Scarcely any medicine is available.

Sing-Sing Prison under Quarantine.—An epidemic of diphtheria has broken out in Sing-Sing Prison, there being forty prisoners down with the disease on March 6. An embargo has been placed on the movement of prisoners both coming in and going out. It is believed that the epidemic is now on the wane.

Poliomyelitis After-Cure.—The January Bulletin of the New York State Department of Health gives an outline of the work the State Board of Health is doing in caring for poliomyelitis victims. During 1918, 42 clinics have been held in 53 municipalities. The total number of cases examined was 654; of this number 456 had attended previous clinics and had been under the care of field nurses. Forty-nine were discharged cured, or practically normal, and 296 were improved, the improvement consisting in increased strength of the weak or paralyzed muscles or a general improvement. During 1918, 823 pieces of apparatus were delivered to patients. Eighty-three patients have been admitted to various hospitals for operations or for the correction of long standing deformities. The results in these cases have been very satisfactory. There were about 70 new cases of the poliomyelitis during the year and these are now being visited by the nurses and after-care treatment begun as soon as the acute symptoms have subsided.

Druggists Object to Selling Liquor.—Representatives of the New York State Pharmacists' Association appeared before the Senate Judiciary Committee on March 5 to protest against any provision of the proposed prohibition enforcement law which will permit them to handle liquor. They urge that the medical men who want to prescribe liquor in certain cases should dispense as well as prescribe it and not throw that burden on the drug business. The druggists want to be permitted, under special permit, to purchase alcohol for prescription purposes only and not to be used for beverage.

Drug Clerks Form Union.—The drug clerks of New York City have organized a union called the "United Drug Clerks' Local No. 325, and have appealed through a resolution to the Central Federated Union for its assistance toward bringing

about amended legislation that will lessen their working hours. At present they are required to work 132 hours a week, which makes, including the lunch hour, a twelve hour day. They also believe their wage scale should be higher; on an average they are now paid \$25 weekly.

New York's Drug Addicts.—James A. Hamilton, Commissioner of Corrections, in his annual report on drug addicts, urged that the identities of such persons be admitted to public record. He reported that during the year 240 men and 32 women were committed by the courts as drug users, of whom 114 men and 16 women had never been convicted before. Mr. Hamilton recommends that all drug users be committed to a correctional institution instead of to hospitals for treatment, because it is too easy to get out of the latter.

Dr. Frederic Huntington Coerr, who has just returned from foreign service, has resumed his practice at 8 East 54th Street, New York City.

Lieut. J. C. Barker, formerly an interne at the New Haven Hospital, has been awarded the medaille sauvetage presented by the Minister of the Interior of France for his work in France during the recent epidemic of influenza. This is a civil and not a military decoration and Lieut. Barker is one of the first medical men in this country to have received this award.

Dr. Cecil Gaston, recently returned from service in the Medical Corps of the U. S. Army, has been reinstated to the position of City Surgeon of Birmingham, Ala.

Board of Health Requires Whooping Cough Arm Band.—The Board of Health of Hornell, N. Y., has adopted whooping cough regulations requiring the placarding of houses and the exclusion of persons not immune to the disease. The person is allowed the liberty of the yard provided he avoids contact with non-immunes and wears an arm band with the words "whooping cough" printed in red ink.

The Medical Association of the Greater City of New York.—A stated meeting of this association will be held at the New York Academy of Medicine on Monday, March 17, at 8.30 P. M. Papers on Chronic Intestinal Toxemia will be read by Drs. A. A. Rutz of Brooklyn and J. G. Dwyer of Manhattan, and will be discussed by Drs. E. Libman, Helen Baldwin, H. F. Graham, and others.

American Medical Editors' Association.—The fiftieth annual meeting of this association will be held at the Marlborough-Blenheim Hotel, Atlantic City, on Monday and Tuesday, June 9 and 10. An attractive program is now being prepared, and all physicians even remotely interested in medical journalism are invited to attend.

Medical Society Elections.—The TRI-STATE MEDICAL ASSOCIATION, which met in Richmond, Va., on February 18-19, 1919, elected the following officers for the ensuing year: *President*, Dr. Robert C. Bryan, Richmond, Va.; *vice-president for Virginia*, Dr. Clifton M. Miller; *vice-president for North Carolina*, Dr. A. J. Crowell, Charlotte; *vice-president for South Carolina*, Dr. A. H. Taft, Charleston; *secretary and treasurer*, Dr. Ralph E. Hughes, Laurens, S. C.

Ask Aid for Hospital Music.—The Hospital Musical Association of New York City, which

for the past nine years has been providing musical entertainment for the sick and crippled in hospital wards throughout the city, is greatly in need of funds, owing to the fact that war charities had deprived them of the usual contributions. At the recent annual meeting Henry W. Goddard was elected president of the association.

Charitable Bequests.—By the will of the late Mrs. Fanny M. Thorpe of Philadelphia bequests are made as follows: To the Philadelphia Home for Incurables \$10,000, also \$5,000 after the death of another beneficiary, and in addition one-half of the residuary estates; to the Hahnemann Hospital \$5,000; as well as one-half of the residuary estate.

By the will of the late Mrs. Louisa Horwitz Bulitt of Philadelphia a bequest of \$3,000 is made to the Children's Medical Ward of the University of Pennsylvania Hospital for the endowment of a free bed.

By the will of the late Walter M. Steppacher of New York, and formerly of Philadelphia, the sum of \$1,000 is bequeathed to the Jewish Hospital of Philadelphia.

By the will of the late Justus T. Brunner of Philadelphia, the sum of \$24,000 is to be equally divided among the following institutions following the death of nieces and nephews: Philadelphia Home for Incurables, Children's Hospital, Mid-night Mission, Pennsylvania Training School for Feeble-minded Children, Friend's Home for Children.

By the will of the late Gustavus B. Benson, Jr., of Philadelphia, the sum of \$2,000 is bequeathed to Howard Hospital.

Death of Ivar Bang.—The *Hospitalstidende* for December 25 publishes the obituary of this distinguished scientist which occurred on the 11th of that month. He was the son of an eminent clergyman and born in 1869. He began his work in physiological chemistry after his graduation in medicine, about 1895, studying in his native land and also in Germany, finishing in Sweden with two years under Hammarsten at Upsala. His first professorship was in the University of Lund, in 1902. Here he remained till his death. After much miscellaneous research he settled down about 1910 to the study of the chemistry of the blood in which department he made his greatest reputation. He investigated especially the lipoids, blood sugar, and blood proteins, his so-called micro-methods of investigation adding greatly to his fame. For a man of his relatively short life to have accomplished so much means of course that he was a ceaseless worker. However, he was also a musician and an excellent 'cello player and took extensive summer pedestrian trips through Norway. His death took place at Lund and the cause, recognizable during life, was sclerosis of the coronary arteries and degeneration of the myocardium.

Obituary Notes.—Dr. MERCY N. BAKER, a graduate of the Woman's Medical College of the New York Infirmary, class of 1872, died in New York, October 12, 1918, of malignant disease. Dr. Baker was born near Bangor, Maine, November 11, 1840. She served in the infirmary as interne, later as attending physician from 1875 to 1884. She lectured on materia medica in her alma mater from 1874 to

1884. She practised her profession for more than 40 years. Beloved by her patients for her skill and her fine womanly qualities, she was a fine example of the family doctor.

Dr. HERMAN VEDDER MYNDERSE, a graduate of the Albany Medical College, in 1887, died at his home in Schenectady, on March 5, aged 58 years.

Dr. HAROUTYOUN TIRYKIAN, of New York, author, linguist, and for nine years physician to the Shah of Persia, died at the Manhattan Sanitarium, following an operation, on March 2, aged 74 years. He was a graduate of the University of Paris, in 1874, played an important rôle in the movement for the nationalization of Armenia, and was at one time president of the Armenian Political Chamber of Constantinople. He received the title Khan and was also decorated for his services to the Shah.

Dr. HARRY HIBBERD WEIST of New York, a graduate of Bellevue Hospital Medical College, in 1891, died suddenly at his home on March 6, aged 51. Dr. Weist formerly resided in Richmond, Ind., was a physician for the Pennsylvania Railroad and physician for the Exchange National Bank.

Dr. WALTER M. GOODALE of Saco, Me., a graduate of the Harvard Medical School, in February, 1919, an ex-Harvard Varsity oarsman, died of pneumonia following influenza in Cambridge, Mass., on February 21.

Dr. JOHN WAITE MITCHELL of Providence, R. I., died of pneumonia in that city on February 27, aged 70 years. He was graduated from Bellevue Hospital Medical College, in 1871. He was visiting surgeon at the Rhode Island Hospital from 1875 to 1903, consulting surgeon to the Catholic Orphan Asylum, St. Joseph's Hospital, and St. Elizabeth's Home. He was a member of the American Medical Association, the Social Science Association, and many other medical and lay organizations.

Dr. NATHANIEL L. EDWARDS, a graduate of the Leonard Medical College, Raleigh, N. C., died of spinal meningitis at his home in Bluefield, W. Va., on February 24, aged 49 years.

Dr. C. E. FARRISH of Mobile, Ala., while crossing the railroad near his home in his automobile, was struck by a freight train and instantly killed on February 21.

Dr. BROMWELL ARTEMUS ANDREW, a graduate of Bellevue Hospital Medical College, in 1869, died suddenly in his office in Jersey City, N. J., on February 28. He was for many years surgeon of the Jersey City Police Department.

Correspondence.

AD VOCEM "MUSK."

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Walter C. Allen, M.D., takes the trouble of telling you in your issue of March 1 of a drug which is quite dead in his opinion. Still, Trousseau, Allbutt, and others, for instance my friends and pupils Elsner and Forchheimer, are called up by him to prove that musk is not so dead after all. Give me, if you please, a few lines to prove that the drug is not altogether extinct or useless. I have used musk a great many times and taught its use since 1860. Hundreds of my pupils have known of it, and many remember my writing about it.

In "A Treatise on Diphtheria," 1880, p. 157, I wrote: "A three-year-old child can comfortably take thirty to one hundred and fifty grams of cognac . . . or a gram of musk or camphor in twenty-four hours."

In my first edition of "Therapeutics of Infancy and Childhood," 1896, p. 338 (reprinted in my "Jacobi Collectanea," Vol. II, 1909, p. 59) you find the following: "The most powerful of all internal stimulants—Siberian musk—should be given frequently, viz., every half to one or two hours, in doses of from one-half to two grains, until from six to fifteen grains have been taken in the course of half a day."

The following quotations are taken from the third edition of "Therapeutics of Infancy and Childhood," 1908:

Umbilical hemorrhage, p. 103: "Feeding and stimulants (whisky, musk, ether, camphor)."

Typhoid fever, p. 191: "Of musk as a powerful stimulant I have seen the best possible results."

Asiatic cholera, p. 198: "Alcohol, coffee, caffeine, strychnine, camphor, tincture of musk are counted among the stimulants."

Scarlatina, p. 213: "When . . . high rectal temperatures and cold extremities, a mottled skin, and a cyanotic hue, the large amount of the toxin which has invaded the system demands strong stimulants—ammonia, musk, and camphor. They are better than alcohol."

Measles, p. 219: "Cardiac stimulants are required such as digitalis, spartein, camphor, and musk."

Diphtheria, p. 234, 235: Musk is mentioned as the best stimulant in very urgent cases of collapse.

Heart and bloodvessels, p. 454: "The centers of the medulla and of the spinal cord are influenced by strychnine and ergot; the vasomotor centers and centers of the heart by caffeine, camphor, ammonia, and musk."

Heart failure, p. 458: "Musk internally, strychnine subcutaneously, may be required."

In the article on "Diphtheria, Its Symptomatology and Treatment," published in "The Twentieth Century Practice of Medicine" (reprinted in *Collectanea Jacobi*, 1909, Vol. I, p. 197), occurs the following: "The very best internal stimulant in urgent cases is Siberian musk. I prefer to give it from a bottle, in which it is simply shaken up with a thin mucilage. In urgent cases it ought to be administered in sufficient doses and at short intervals. When ten or fifteen grains given to a child one or two years old within three or four hours will not restore the heart's action to a more satisfactory standard, the prognosis is very bad."

In "Treatment of Influenza in Children," *Medical News*, December 15, 1900 (reprinted in *Collectanea Jacobi*, Vol. I, p. 354, 1909), I stated: "One of the best stimulants, useful in the gravest of all cases which are attended with collapse and heart failure, is sadly overlooked among us, viz., Siberian musk. I know of nothing better in the most urgent of cases. A child of two years should take of the 10 per cent. tincture five to ten minims every half hour until half a dozen or a dozen doses have been taken. Musk, together with large, hot enemata, has led me over many a difficult pass, and I again offer this experience of mine, which now extends over fifty

years, as a contribution to your aid in dire distress, always, however, reminding you of the fact that all these measures are not exclusive to influenza, but to all conditions of nerve exhaustion, no matter from what cause."

These are only specimens which I am sure will interest Dr. Allen.

A. JACOBI, M.D.

19 EAST FORTY-SEVENTH STREET, NEW YORK.

THE SPAS OF AMERICA.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the issue of the 7th inst. an excellent article calls attention to the therapeutic value of the spas of America. My interest in this subject dates back many years. In the *Medical News* of July 10, 1897, I expressed the same views as follows: "A careful study of the American spas convinces me that we have in this country some of the highest types of these springs. A fertile field is open to the medical profession of this country which, if properly tilled, not only would bear good fruit to numberless invalids, real and imaginary, but satisfactory results to many colleagues who now labor in crowded towns and cities during the hot summer months."

How this was to be done was partly demonstrated by my description of thirty-three resorts which I had personally visited. It appears that your contributor still finds it necessary to make the same comment. He gives as one of the unfortunate reasons of failure that they have not been scientifically developed, and he properly concludes: "If the physicians of America would give greater cooperation and encouragement to the development of the American spas, founded upon an ethical basis, success would be insured." He does not tell your readers how to achieve this consummation; in fact, he indulges in the type of "scientific development" that is common among American spa doctors, by offering in two pages a complete epitome of hydrotherapy, without giving us a particle of scientific information about the beautiful resort in which he lives. Perhaps this omission is attributable to modesty. But how are your readers to learn anything ethical or scientific about the latter if he refrains from the former?

If we compare the literature furnished by physicians at our American spas with that offered by those in European spas, the reason for our failure will become evident. The latter do furnish scientific studies and practical contributions. And let me tell your readers how they obtain it. Nearly every spa physician in Europe visits the large clinics during the intervals between the seasons. I have known some to come to our shores. They not only endeavor to improve their knowledge of diagnosis and pathology, etc., but, with an eye to the main chance, become acquainted with the physicians of the cities by attending medical society meetings, reading papers before them, and other "ethical" activities. How many American spa doctors give like cooperation and encouragement to their spas? Here is "the nigger in the woodpile."

The physician who sends a patient to "the springs" is more concerned about the *mental equipment* of the doctor at the springs than with the

chemical composition of the waters. Nauheim and Marienbad have illustrated that the scientific standing of the physicians at a health resort is the chief asset in its prosperity.

SIMON BARUCH, M.D.

51 WEST SEVENTIETH STREET.

OUR LONDON LETTER.

(From Our Own Correspondent.)

LONDON, February 13, 1919.

Social Evenings at the Royal Society of Medicine.—Out of the war there has certainly emerged in London a spirit of goodfellowship in the medical profession which formerly did not exist. Many expressions of this can be seen in the institution of post-graduate classes to which medical men of all those nations which fought on the Entente side are welcome; facilities in the same way are extended for the visit of museums, institutions, and libraries, while the Royal Society of Medicine has now for over two years been a center of international goodwill and hospitality. The departure has been made by the Society now in holding weekly "Social Evenings" whose informal character is a clear derivative of military camaraderie. Every Wednesday evening a distinguished man is invited to deliver a discourse on some subject congenial to himself and of wide interest. After the discourse the library of the Society is available for informal discussion, at which it is certain that many professional acquaintanceships will be turned into personal friendships. The first discourse was given by Sir John Bland-Sutton on Gizzards, and the second by Sir Arbuthnot Lane on Intestinal Stasis. Other discourses are announced from Dr. Norman Moore, the president of the Royal College of Physicians of London, who will talk on English Morbid Anatomists, and from Sir William Osler, who will introduce to the audience the ever-fascinating character of Sir Thomas Browne. Dr. Henry Head and Mr. W. G. Spencer, whose addresses are entitled respectively "Disease and Diagnosis" and "Larrey and War Surgery," are certain of interested audiences.

Sir William Osler has for a long time made a steady cult of Sir Thomas Browne, while Dr. Norman Moore is famous as a medical historian and contributed many of the more important medical biographies to the National Dictionary of Biography. Mr. Spencer will introduce his hearers, in Larrey, to a man whom the great Napoleon described as the most valuable individual in his armies. Larrey was with the French armies in Italy, when he established in that country several schools of surgery; he was in the Egyptian expedition, and distinguished himself by his self-sacrificing attentions to the wounded; he served in the Australian campaigns, in Poland, in Spain, and in Russia; and finally he was wounded and taken prisoner at the Battle of Waterloo. Baron Dominique Larrey was a learned surgeon for his time, was one of the earliest organizers of an ambulance service, the author of the admirable *Memoirs de Chirurgie Militaire* and was an extraordinarily brave and patriotic man.

Medical Scholarship in London.—Seventeen

medical entrance scholarships and exhibitions, of an aggregate total value of about £1,550 will be offered for competition this year in connection with certain metropolitan medical schools. The scholarships and exhibitions are tenable in the faculties of medicine at Kings College, London, University College London, and at the medical schools connected with these two colleges, with the London Hospital, and with the Royal Free Hospital, this last school being the London school of Medicine for Women. That such valuable prizes are a stimulus to student work is undoubted, but what is really required in London is more pecuniary support for the teachers of these subsidized lads.

Pay in the Indian Medical Service.—The Secretary of State for India, Mr. S. Montague, has received a deputation from the British Medical Association regarding the pay in the Indian Medical Service to whom it was stated that the conditions both in pay and prospects of the officer in question would be at once bettered. Regarding the pay of the Service, the Secretary of State announced that an increase of pay amounting to 33 1/3 per cent. of present rates would be sanctioned. The object of this measure being to attract to the Service European candidates with the highest professional qualifications, the question whether Indian candidates entering the permanent Service after December 1, 1918, shall be eligible for increased rates of pay, and if so, to what extent and under what conditions, has been reserved for future consideration. All Indian officers already in the permanent Service on December 1, 1918, will be eligible for the increased rates of pay. As regards private practice Mr. Montague explained that, subject to the reservation that it must be under the control of Government, he was of opinion that it was to the public interest that the Service should enjoy as fully as possible opportunities of private practice, and he assured the deputation that no further restriction of the facilities for private practice now enjoyed by the Service was contemplated. The increasingly liberal attitude toward the natives of India is of good omen.

New Public Health Regulations for the Control of Epidemic Disease.—The toll exacted from the population by various forms of epidemic disease during the years of the war has been very heavy and has led the local Government Board to exhibit much activity. The secretary of the board has circulated to sanitary authorities and medical practitioners a general order containing the Public Health (pneumonia, malaria, dysentery, etc.) Regulations for 1919 and a circular explaining these regulations. Their object is to secure better control over certain epidemic diseases prevalent or threatened at the present time and to increase the facilities for their treatment. The regulations impose the duty of notification by practitioners of any cases of pneumonia occurring under their care, if primary or the result of influenza. All cases of malaria, dysentery, and trench fever must be notified unless the practitioner knows that this has been done in the same district within six months. The regulations in regard to the hand-

ling of food by carriers are extended to the enteric fevers, and the duties in relation to lice-borne disease to typhus and relapsing fever. Local authorities may provide medical assistance for any of the diseases named in the regulations. The order it will be seen is remarkably far-reaching, while asking for powers of diagnosis from the general practitioner which it is a high compliment to credit him with. But many thousands of general practitioners during the past four and a half years have seen malaria, dysentery, and trench fever in huge quantities, so that the discrimination necessary to the discharge of the order will be forthcoming.

The Curability of Cancer of the Larynx.—At the last meeting of the Medical Society of London, Sir St. Clair Thomson, the well-known laryngologist and surgeon to the throat department of King's College Hospital, read a paper upon intrinsic cancer of the larynx in which he showed the remarkable progress that has taken place in the operative treatment of what 33 years ago was considered a necessarily fatal condition. Laryngofissure which now gives the sufferer a reasonable hope of recovery from intrinsic cancer, was unsuccessful in the great Billroth's hands, and was condemned by Morell Mackenzie, Henry Butlin, an original and bold operator, and Felix Semon, as an unreliable procedure. How far this is changed is seen from Sir St. Clair Thomson's figures. Of 38 cases of laryngeal cancer on which he has operated, 22 were alive at subsequent periods of from 6 months to 10 years without manifesting any symptoms of return. Moreover, none of the 38—a total made up of 34 males and 4 females—died from any cause directly attributable to the operation. In successful cases the resulting voice was, said Sir St. Clair Thomson, usually a good one. It has been his custom to keep the patient silent after the operation for at least 3 weeks, and then to permit whispering. After which special reeducation might be required, but as a rule it was not necessary, while school-masters and clergymen have been found able to carry on their callings. He now made whispering compulsory for 3 weeks only.

The Medical Parliamentary Committee.—This committee, which has the laudable if extravagant pretext of making itself, by democratic election, a truly representative committee of the medical profession, gave a dinner this week to the new medical members of parliament, asking the heads of many great departments in medicine to meet the new senators. The chair was taken by Sir Watson Cheyne and the principal guest was Dr. Christopher Addison, formerly demonstrator of anatomy at St. Bartholomew's Hospital and now president of the local Government Board. Dr. Addison in a long and carefully rendered speech promised that in connection with the Ministry of Health Bill, which was going to be read in parliament immediately, he would institute Professional Consultative Councils to whose views he would listen and from whom he would expect a great deal of strenuous assistance. But he allowed that there was no organization in the profession that really represented collective medical views, and this is

exactly what the Medical Parliamentary Committee desires to do. At the dinner a forceful plea for medical unanimity at an important juncture of history was advanced by Mr. E. B. Turner, formerly chairman of the Representative Body of the British Medical Association; and if that body should be found meeting with the Medical Parliamentary Committee a federated committee of advice would, *ipso facto*, be formed. Mr. Turner, a well-known London general practitioner, who enjoys the rather unusual distinction for a general practitioner of the F.R.C.S., Eng., was in his youth a famous foot-baller, and he drew his many examples of the value of cooperation, and unselfish team-work from his recollection of the tactics employed in conducting a football fifteen to success.

American Gifts to Portsmouth.—Much valuable hospital stores and comforts supplied by the American Red Cross to the U. S. Base Hospital at Portsmouth, has been given to the Mayor of Portsmouth for distribution among the charities of his city. All the constructional work necessary to turn the Portsmouth Asylum into a hospital has been presented free to the asylum, in addition to the payment made for dilapidation. Portsmouth appreciates such visitors as these.

OUR LETTER FROM PARIS.

(From Our Own Correspondent.)

PARIS, February 15, 1919.

Meeting of the Academy.—The President of the Academy of Medicine of Buenos Aires telegraphed to the Paris Academy the admiration of himself and colleagues for the self-sacrificing devotion displayed by the French Medical Corps in the war, and their congratulations for the splendid victory of the Allies. Dr. Simon Flexner of New York was received as an honored guest by the Academy and warmly applauded upon his entrance.

Dr. Leguen presented an interesting paper upon the vesical retention which often accompanies an hypertrophied prostate, claiming that, contrary to the generally accepted theory that the cause lies in the mechanical closing of the vesical opening by the enlarged gland, often the cause is found in an hypertrophy of the neck of the bladder, causing it to lose its elasticity and ability to open; this is the reason, he claims, why the removal of the prostate does not at times give the results expected.

An American Memorial.—Mr. Wanamaker of Philadelphia recently made public the suggestion that America build in Paris a monument to the Allied dead in the cause of the right, and much discussion has followed—a proposal made by Dr. P. K. Brown to build a research laboratory appeals to one as a splendid idea.

We Americans want to leave behind us something that will be a live and lasting memorial, something built on what we have developed in common in our work for the right of our fellow men to live and enjoy to the full the blessing of freedom and fraternity, something that will grow in influence, binding us closer and closer to the French people and our other Allies, giving us something to come back to for our own good and a common meeting ground in an intellectual sense. If

the memorial could take the form of an Inter-Allied Hospital and Research Laboratory it would serve all these purposes and more.

Thousands of young French women from the best homes have given gladly four years of hospital work to the Service de Santé. They volunteered to meet a demand for nursing that France could not supply. French training schools have not attracted the class of women that our best American schools have, nor have those who have entered French schools had what we would call a nurse's training. It will be impossible for many of these young women to go back to the social lives they led before the war. Some organized expression of their feelings they will surely find, and what can they contribute to France more needed than to give her a system of trained nurses of the highest type, the product of their desire to memorialize in a constructive social form the work they did for their country in the hour of her need? A school that would fill the requirements of these women could be a part of the Memorial Hospital.

There is little need to dwell upon the benefits through science to humanity at large that would come through provision for a common meeting ground of English, French, Italian and American research workers in medicine. The war has shown that centering men on the problems in hand resulted in rapid advances along many lines. Most of the unsolved problems will be abandoned now for months with the rapid demobilization bound to go on. Problems like cancer, pneumonia, etc., are being worked on all over the world, but the advances would be far more rapid if the important agencies would be kept closer in touch through a central organization to which could come all delegated workers. We Americans want to come back to France, we want to feel that we have a common forum where we can meet our Allies for consideration of our common problems. The whole subject of exchange professorships needs to be handled on a new and broader basis and made a rule, not an incident. How better can we do it all than by building a memorial that will always stand for the cause of humanity for which we have fought successfully?

War Neuroses.—Recently there appeared an article from an American base hospital which gives an entirely incorrect account of the outcome of cases of war neuroses. The article conveyed the idea that no one recovered sufficiently to perform military service, when, as a matter of fact, practically all recover.

After a nearby shell explosion, a short period of trembling is not unusual. This may last only a few minutes or a part of a day, and ordinarily these patients are returned to duty by the battalion and regimental medical officers. When the stage of absolute exhaustion is reached, nervous symptoms are likely to develop. These cases usually reach the triage, from which place a large percentage return to duty. Forward neurological stations receive and return to duty many of the cases that have been evacuated from the more forward areas, and this hospital receives only those severe cases passed on by three other medical posts, cases which are not expected to recover speedily.

With these cases the hospital returns to duty the following percentage:

Class A.....	19 per cent.
Class B.....	44 per cent.
Class C.....	32 per cent.
Class D.....	5 per cent.

Thus 19 per cent. are ready for immediate combat duty, an additional 44 per cent. presumably will be ready after a short interval, making a return to the line of 63 per cent., with 32 per cent. more, 95 per cent. in all, capable of rendering A.E.F. service. Only 5 per cent return to the United States, and even they are not incurable, return indicating in this instance a duration too long to warrant continued care in France

A war neurosis which persists is not a creditable disease to have, as it indicates in practically every case a lack of the soldierly qualities which have distinguished the Allied armies, and it will not be a serious problem. The population of the United States will easily absorb the few scores of uncovered cases that will exist after the expiration of six months of peace, and no one should be permitted to glorify himself as a case of "shell shock." It should become widely known that a persistent war neurosis is not something of which to be proud. It is not the same as an honorable wound. A temporary state of a few days' duration from which a person quickly recovers is not discreditable, but if the symptoms persist after rest and treatment then it is a disorder of the will, and one does not boast of a weak will. In an army of perfect men there would be no "shell shock" problem.

University Union in Belgium.—Mr. Harmignies, the new Minister of Science, Literature and Public Education, has just been approached with a suggestion for the foundation in Brussels and one or two other large Belgian cities of homes for American university students, such as the one created in Paris during the war, under the title of the American University Union in Europe, to meet the needs of American university and college men and their friends. It is expected that many militarized American university men will settle in France and Belgium, and that many younger Americans will come to study in universities of both these countries in order to perfect their knowledge of the French language and of European matters. For this reason, the creation (in Brussels, to begin with) of an American Students' Home is being mooted.

Mr. Harmignies has hailed the idea with delight as a means of encouraging Belgian intercourse with the United States. Measures therefore will be taken by the Minister, in conjunction with the Paris Committee of the American University Union in Europe, to realize the scheme as soon as quicker communications have been established between Brussels and Paris and when things have taken on a more normal aspect than at present.

Evacuation of Red Cross Hospitals in Paris.—The American Red Cross military hospitals of Paris are being evacuated according to arrangements made to close them as soon as possible. Hospital No. 1, at Neuilly, will probably be the first to close. This hospital has occupied the building that was intended for the school at Neuilly, the Lycée Pasteur, since August, 1914, and the municipality of Neuilly is now anxious to open the school in January. The hospital is now caring for about 600 patients, who are being sent to convalescent homes as

rapidly as possible. A few months ago the number of patients was 2,000.

Hospital No. 5, at Auteuil, is also being quickly emptied and will probably close about the same time as the Neuilly hospital.

146, AVENUE DES CHAMPS ELYSÉES.

CANADIAN LETTER.

(From an Occasional Correspondent.)

MONTREAL, March 4, 1919.

Conference of Public Health Officers at Ottawa.

—On February 3, 1919, representatives of a number of the Canadian provinces met in Ottawa at the behest of Sir Thomas White, acting premier, to discuss the venereal problem and legislation for the control of the same. Each province sent its chief health officer. Among those present were Major General J. T. Fotheringham, D. G. M. S., Dr. P. H. Bryce, chief medical officer Department of Immigration, Ottawa; Capt. Gordon Bates, Toronto; Lieut. Col. I. W. S. McCullough, C. A. M. C., chief officer of health, Ontario, and Dr. Elzear Pelletier, Superior Board of Health, Quebec.

The following resolutions were passed:

"Whereas, in the reconstruction of Canada, following the great war, there are very many important problems that must be taken into consideration, such as finance, soldiers' reestablishment, labor, etc. Among these the conservation of the health and lives of the people is equally, if not most, important to be dealt with, as life is the country's greatest asset. Therefore, be it

"Resolved, That this conference whose personnel is made up of representatives from the various provincial governments of Canada, together with the chief medical officers assembled at Ottawa, for consideration of the venereal disease question, memorialize the Government of Canada that it is in the interests of the future health and life of the citizenship of Canada that there should be immediately established a Federal Department of Health.

"That the representatives of the several governments and health departments of the provinces of Saskatchewan, Manitoba, Ontario, Quebec, and New Brunswick, assembled in conference, are agreed, subject to the consideration of the governments of the respective provinces, that the following general principles are necessary in any provincial legislation looking to the prevention and control of venereal diseases in the said provinces: (1) Compulsory notification; (2) compulsory treatment; (3) standardized treatment; (4) authority to examine persons suspected of being affected with venereal disease; (5) prevention of quack treatment, quack remedies, and of advertising of such treatment and remedies; (6) right of entry of public health authorities; (7) prevention of infection; (8) power to make regulations by order in Council; (9) liability of municipalities or local authorities; (10) penalties.

"That the criminal code of Canada be amended so that a person who is suffering from venereal disease in a communicable form, who knowingly or by culpable negligence communicates such disease to any person, shall be guilty of a criminal offense; provided that (1) a person shall not be convicted under the section if that person proves

that he or she had reasonable grounds to believe that he or she was free from venereal disease in a communicable form at the time the alleged offense was committed; and (2) no person shall be convicted of any offense under this section upon the evidence of one witness, unless such witness be corroborated in some material particular by evidence implicating the accused.

"In view of the fact that the Government of Great Britain supports the treatment of venereal disease in the proportion of 75 per cent. to that of 25 per cent. paid by the local authorities, this conference respectfully urges upon the Government of Canada to provide financial assistance to the provinces on a scale similar to that in Great Britain, for the treatment of these affections.

"That the conference suggests that all seamen coming within the purview of the immigration act be examined for freedom from venereal disease before being allowed ashore at Canadian seaports.

"Whereas, successful control of venereal disease depends, among other factors, for the free or readily available and adequate treatment of these diseases, and whereas the cost of one of the remedies for the cure of syphilis, viz., salvarsan, and of other remedies of that character, is excessive; and whereas the production of the remedy in Canada is monopolized by two persons or firms who have been licensed to carry on such production, therefore, be it

"Resolved that this conference do respectfully recommend that the Government of Canada shall give the right of the production of salvarsan and other remedies of this nature to any person or firm or corporation satisfying the head of the health department of any province; or in the event of the establishment of a federal department of health, of the head of that department, of his or their ability to successfully produce a satisfactory product of the kind."

The conference further recommended that another meeting representative of social agencies should be called to discuss the constructive social measures which may be undertaken to combat the existence of venereal disease in the Dominion; and also that legislation be undertaken to prevent the advertising, selling, or giving of quack medicine to cure venereal disease.

Report of the Committee of Sixteen of Montreal.—Another report of the Montreal Committee of Sixteen, formed with the object of investigating vice conditions in Montreal, making these public, and suggesting plans for improving the existing state of affairs, was issued on February 22. This report emphatically recommended the policy of repression. It is stated that experience gathered in all parts of the world has shown that absolute repression is the only practical method. Toleration is not only ineffective, but contrary to Canadian law. The Committee of Sixteen includes a program on venereal disease and a campaign against it as part of its work, because a strong propaganda of education in regard to the peril will strike at the very roots of commercialized vice.

Feeble Mindedness in Canada.—The question of feeble-mindedness is important everywhere. It is a prominent factor in the production and dissemination of venereal diseases, as perhaps the

large majority of women who lend themselves to immorality are of a low mental grade. This being so, it is of the first moment, in the interests of public health, to deal with the feeble-minded in such a way that they will not be a menace to the general population. In Canada the problem of the feeble-minded is greatly exercising the minds of social and medical authorities. Immigration lets into the country a large number of those who, regarded from the outlook of mentality, are weak when not really degenerates. A commission has been sitting recently in Ontario, before Mr. Justice Hodgins, to inquire into the whole matter and to devise, if possible, means to remedy the situation. Dr. C. P. Johns, physician at the jail farm, Toronto, testifying before the commission a few weeks ago, suggested that there should be established a clearing house in Toronto for mental defectives, where experts could examine patients and decide as to the institutions in which they should be placed. He advocated sending them to farm colonies, but not too many to one place. Dr. Johns said that from 35 to 40 per cent. of 280 inmates at the jail farm were subnormal. Another witness was Canon Tucker of London, who said that he thought there were between 10,000 and 50,000 feeble-minded persons in Canada. Dr. Lilian Langstaff, superintendent of the Women's Industrial Farm, Toronto, said that 40 per cent. of the inmates there were mentally defective. She suggested classification as a solution, as moral degenerates taught vice to the ordinary feeble-minded person.

Annual Meeting of the Montreal General Hospital.—The annual meeting of the General Hospital, Montreal, was held on February 18, when it was pointed out that more state and municipal support was necessary to enable this large but meagerly endowed hospital to continue its work on the usual scale. It was argued that the burden of caring for the sick who are unable to pay for hospital treatment should be taken over by city and province. In Toronto the hospitals are financed by the city to the extent of \$1,000,000. Toronto pays \$1.25 per day to each of the general hospitals for maintenance of each indigent patient, and for each such patient the hospitals received 32 cents a day in a year from the Province of Ontario. Montreal grants totaled only \$5,000, and grants to the same amount in the year came from the Province of Quebec. The secretary's report showed that 7,295 new patients had been received during the year. Of these there were 2,035 public cases, 1,206 soldiers, 355 sailors, 1,038 private cases, 631 semi-private. Maximum number of patients in the hospital at any time was 441; minimum, 291.

Personal.—Lieut.-Colonel T. A. Starkey, Montreal, has been appointed consultant in sanitation in Military Districts 4, 5, 6, and 7.

Major Brefney R. O'Reilly, M. R. C. S., of Toronto, has been gazetted an officer of the Order of the British Empire.

Dr. Richard Andrews Reeve of Kingston passed away with dramatic suddenness on the night of January 27. Dr. Reeve was returning from a committee meeting of the Academy of Medicine, Toronto, when he fell dead on the street. He was one of the best-known eye specialists in Canada. He was born in Toronto in 1842, and was graduated

from Queen's College, Kingston, in 1865. Shortly afterward he commenced practice in Toronto, and was assistant surgeon of the Toronto Eye and Ear Infirmary, 1867-72. He was also oculist and aurist to the Toronto General Hospital, lecturer on ophthalmology and otology in the Toronto School of Medicine, and became a professor in the University of Toronto in 1887. Dr. Reeve received the honorary degree of LL.D. from Toronto in 1902, and from McGill and Birmingham universities in 1911. He was dean of the medical faculty of Toronto University from 1896 to 1908, and president of the Alumni Associates from 1904 to 1907. He was president of the British Medical Association at its meeting in Toronto, in 1906, and was also president of many Canadian medical associations.

While the late Dr. Reeve shone in his profession, and attained the highest eminence, it is as a man, even more than as a learned and skillful exponent of his chosen specialty, that he will live in the memories of all who knew him. He was of such transparent honesty and nobility of character that the possession of these attributes was obvious to those who knew him only slightly. He was so modest and unassuming that he carried his wide scientific knowledge with a total lack of arrogance. He was imbued with the conviction that it is the wise man who knows how little he knows. In his daily life and in his intercourse with his fellow men he was ever courteous and considerate. These were innate qualities which marked him from the ordinary run of individuals.

Progress of Medical Science.

New York Medical Journal.

March 1, 1919.

1. Fourteen Points Concerning Ophthalmia Neonatorum. Frank Allport.
2. Chronic Headaches with Painful Points. George T. Stevens.
3. A Description of the Carrel-Dakin Treatment. William P. Cunningham.
4. Two Cases of Orbital Disease of Nasal Origin. E. L. Meierhof.
5. The Family Medicine Chest of Our Grandmothers. Emily Read Jones.
6. The Linear Dermatoses. Fred Wise.
7. An Improved Bone Surgery Equipment. H. C. Masland.
8. The Removal of Foreign Bodies from the Lung. John W. Murphy.
9. Simple Prevention of Influenza and Pneumonia, Its Frequent Complication. S. L. Burton.
10. A New Principle for Treatment of Gonorrhea by Sensitizers and Developers. F. S. Mason.

2. Chronic Headaches with Painful Points.—George T. Stevens calls attention to the common form of frequently recurring headaches associated with painful points in the region of the back of the head and of the neck and back. Such pains have often been attributed to rheumatism, or to the general nervous disturbance caused by the headache. They may be felt at the location of the occipital protuberances, at the extremity of the spinous process of the seventh cervical vertebra, at the lower points of the scapula, at the vicinity of the twelfth dorsal vertebra, this point being more or less diffuse, at the turn of the shoulders, also diffuse, or at the point at the lower extremity of the spinal column. There may also be frontal, diffuse pain, or pain at the vertex of the skull. Some of these points are painful even when headaches are rare. Such pains were formerly attributed by the author to the principle of reflex, particularly from eye peculiarities, and it was found that with the correction of certain eye defects the pains as well as the headaches often disappeared. Examinations by the tropometer and the clinoscope, however, showed that the view of reflex was too narrow and that many phenomena hitherto

considered to be of a reflex character were due to specific mechanical causes. The author became convinced that these pains are associated with the muscles whose attachments at the points involved are subject to special tension under certain conditions and that they are due to a lack of proper equilibrium, the position of greatest equilibrium being the most restful. The next step was to determine the cause of the loss of equilibrium between the head and the body, which affected the splenius capitis and produced pain at its attachment (the most common of the painful points). This cause he believes to lie in the natural desire for clear vision which is dependent upon certain adjustments of the eyes. For instance, if the plane of vision is somewhat depressed, as it is in case the orbits are adjusted in such a way as to induce such a depression of the plane of vision, then both the muscles immediately affecting the direction of the eyes and the surrounding muscles of the ball are brought into action. Furthermore, the muscles at the posterior aspect of the cranium are enlisted in the work of adjusting the plane of vision to its most effective level. The position of the head is also influenced in order to adjust for certain declinations. On the other hand, if the plane of vision is too high, which it may be by reason of the direction of the orbits to the cranium, or if, by reason of certain forms of declination of the vertical meridians, an approximation to the best adjustments of these meridians can be made by throwing the head forward, this is accomplished by means of adjusting the muscles of the neck. These facts have been often stated, but are too generally overlooked. The headaches themselves are the response to similar influences to those which give rise to the painful points, but on account of the more general and, in many cases, more flexible attachments of muscles involved, the pain is more diffuse. Other general symptoms are associated with these pains, such as malaise, nausea, and vertigo. These may arise from the pressure of muscles on certain nerves or from the position of the cranium in its relation to the body. Fatigue, impure air, malnutrition, etc., may be contributing causes. The remedy, however, lies in attention to the condition of the eyes. The use of properly adjusted glasses will serve as effective and permanent means of relief in a certain proportion of cases; in others the position of the eyes in relation to the cranium may require adjustment. The question of the sufficient rotations of the eyes and the great importance of declination should be realized and made the subject of careful treatment.

Journal of the American Medical Association.

March 1, 1919.

1. Staphylococcus Aureus Pneumonia. H. T. Chickering and James H. Park.
2. Early Suture of Wounds of the Face. V. H. Kazanjian.
3. Schistosomiasis (of Bilharz) Associated with Uncinariasis: Report of a Case. James J. Short.
4. The Complement Fixation Test in Influenza Pneumonia: Studies with Serum from Convalescent Patients, the Influenza Bacillus Being Used as Antigen. F. H. Rapoport.
5. The Transmission of Infection Through the Eye. Kenneth F. Maxcy.
6. Hysterical Aphonia Associated with Latent Syphilis: Report of a Case. Charles Wolf and E. G. Breeding.
7. Treatment of the Pneumonic Disturbance Complicating Influenza: The Transfusion of Citrated Immune Blood. C. W. Ross and Erwin J. Hund.
8. Epidemic Meningitis and Detection of Meningococcus Carriers. Edwin Henry Schorer.
9. The Pathologic Anatomy of Influenza Bronchopneumonia. E. R. LeCount.
10. The Diagnosis of Mitral Stenosis. Marcus A. Rothschild.

5. The Transmission of Infection Through the Eye.—Kenneth F. Maxcy draws attention to the following facts: (1) That the eyes offer a relatively large surface area for the reception of droplets sprayed from the mouths of other persons. (2) That an organism introduced into the conjunctival sac may be recovered from the nose in five minutes, from the throat in fifteen minutes, and from the stool in twenty-four hours. (3) That the upper respiratory tract of a person wearing a properly constructed mask may be infected by exposing the eye briefly to direct droplet spray. (4) That this portal of entry is of importance in the transmission of acute respiratory infections. He also points out that the frequency with which respiratory infec-

tions, such as acute coryza, measles, and influenza, begin with a conjunctivitis suggests that the entrance of the causative organism by way of the eye may not be uncommon. At all events, the evidence is sufficient to warrant serious consideration of this portal of spread in planning measures for the prevention of the spread of contagion. Moreover, the pathologist at the necropsy table should remember that infectious material splashed into the eyes is just as potent as if it had been directly implanted on the mucous membrane of the nasopharynx.

The Lancet.

February 8, 1919.

1. A Lecture on Glizzards and Counterfeit Glizzards. Delivered at the Royal Society of Medicine on February 5, 1919. Sir John Bland-Sutton.
2. Medical Aspects of Aviation. L. E. Stamm.
3. Some Simple Tests of Physical Efficiency. Lieut.-Col. Martin Flack.
4. The Treatment of Venereal Disease. Sir Archdall Reid and P. Hamilton Boyden.
5. Hilus Tuberculosis in the Adult. Clive Riviere.
6. The Substitution of Air for Oxygen in Anesthesia with Hewitt's Gas and Oxygen Apparatus. Captain J. H. Fryer.
7. Stammering in the War Psychoneuroses. Captain E. Prideaux.
8. A Simple Method of Staining the Diphtheria Bacillus by a Toluidine Blue Acetic Acid Mixture. P. L. Sutherland.

2. Medical Aspects of Aviation.—L. E. Stamm draws attention to the importance to the aviator of good muscular tone with the power of nice control and adjustment. Deficiency in this respect is characterized by the pilot instructor as "heavy on controls." Another factor of importance is "conscious control of the muscles," which means the power not only to control the movement of muscles but to relax them. The inability to relax or inhibit muscular contraction shows a lack of conscious control of the motor mechanism, and of complete rapport between the muscles and the brain nerve centers. It may be easily demonstrated by instructing the person to lie down on the floor and relax all muscles; in many cases upon gently raising a limb and then letting it go, instead of dropping limply, it remains in the air, showing that the muscles are rigid and not relaxed. In training for aviation a pupil may lose his head and because of this unconscious rigidity hang on to the joy stick, making it impossible for the instructor to take proper control. Stamm suggests that instruction in the proper control of the muscles should be embodied in the ordinary physical training. In the air circumstances arise continually which call for rapid decision, discrimination and judgment, and the proper exercise of these faculties often decides the fate of the aviator. Above all things, a good pilot requires a mental constitution that can take in all the circumstances of a situation and make a rapid and quick decision. He requires not only quick and accurate co-ordination between the senses and the muscles, but also between these and the higher mental functions. Testing for the "simple reaction time," therefore, is of little value in candidates for the air service; what one requires is to test the ability of the candidate to respond quickly and accurately under conditions in which the higher *conscious* mental functions are involved. In order to test this many forms of apparatus have been devised, but the difficulty has been to find one accurate and rapid and at the same time simple enough for practical use. The author has devised such an apparatus, which has proved of value. It consists of a chronoscope which registers to 1/100th second, and is worked electrically by a hammer from a coil and accumulators. There are four signals, two differently colored lights, an electric horn, and an electric bell. The operator has a switchboard, by which any one of the signals is put in the current, and the signal is given by touching the key. The candidate sits opposite the operator and places his right-hand first finger on the brass plate, which is equidistant from the three keys. The end keys are for the corresponding lights and the middle key is for the horn or bell. When the operator presses a key one of the signals is given and at the same time the chronoscope starts. The candidate responds by touching the appropriate key, which stops the chronoscope, and the reaction time is read off in 1/100th seconds. The candi-

date is first tested for the simple "automatic reaction time" by one signal, having been told beforehand which signal to expect. Though the author attaches no value to these simple tests, they enable the candidate to get used to the machine. Tests are then made with two lights, then with two lights and horn, and finally with all four signals, given haphazard. In the last test the candidate is told to keep his finger on the brass plate instead of using the key previously used for this signal. This involves mental inhibition. The author has tested 150 cases, including pupils and experienced pilots, and has found a remarkable correspondence between the results obtained and their capacities. He has also found that the results of the tests in pupils and the criticisms of their instructors have shown a marked correspondence. These tests involve considerable adjustment and co-ordination between the senses and the muscles and at the same time call for an accurate working of the higher mental functions and prolonged mental effort. The "will" factor is also brought into play; this may be negative, in which case the candidate will not do his best, or it may be very positive, when the candidate will exceed for a time his normal power of reaction, but, mental fatigue setting in, be unable to keep up the pace he has set for himself. The two good types are those in which the reaction times are very quick, but in the final tests several mistakes may be made, and those who are absolutely accurate but appreciably slower in reacting to signals. Another important characteristic in the aviator is emotional stability or "guts." The individual who is liable to serious emotional disturbance or, in the language of the service, liable to get the "wind up," is constitutionally unfitted for work in the air, since no matter how good his judgment may be, in the presence of danger it is inhibited by the emotional disturbance of fear. Stamm has found the pulse rate under ordinary medical examination a very fair guide to detect the "windy" type. He points out that the instability does not appear to be in the vital centers, but in the higher nerve centers controlling them. Then there is the typical facial expression—a furtive, apprehensive look. In cases where this is marked, the author states he would have no hesitation in throwing out its possessor as undesirable for the air service. On the other hand, though quick, accurate judgment and emotional stability or "confidence" are essential qualities, over-confidence in a judgment that does not justify such confidence probably leads to just as many crashes in the air as "wind up" or losing one's head. Aviation requires, above all things, a strong, tough nervous system, for which the author suggests the term "nerve physique," which is found in young men who have led an outdoor life. Stamm disagrees with those who believe that the fighting scout should possess the fighting spirit and be able "to see red." In his opinion, cool aggressiveness with judgment unclouded by any emotional disturbance is what is required. Any excess of alcohol or tobacco would, of course, act adversely upon the nervous system, which must be kept up to pitch. Since horse riding is one of the best physical exercises and comes nearer controlling an aeroplane than any other ground occupation, the author suggests that every aerodrome should have its stables. What better place than an aerodrome for polo, he asks?

3. Some Simple Tests for Physical Efficiency.—Lieutenant-Colonel Martin Flack describes certain tests by which the physical efficiency of an individual may be computed. The technique is important, as it is essential that the tests should be carried out in the same way on all occasions. The first of these is the *response of the pulse to exercise*. The sitting rate of the pulse should be first taken, then the standing rate; if unsteady, the pulse should be counted in periods of five seconds until a steady rate is obtained. Standing before a chair, the candidate places one foot upon the seat of the chair and steadily raises his whole body to the height of the seat five times in fifteen seconds, one foot being retained on the chair throughout. The examiner should regulate the speed and rhythm by swinging his arm forward and backward, holding the candidate's wrist with his fingers on the pulse. The subject still standing, the examiner then counts the pulse rate in five second intervals and notes

the acceleration and the time taken to return to the previous rate. The increase should be about 20 and the time of return to normal 15-25 seconds; more than 30 seconds is suggestive of cardio-vascular inefficiency. The *breath-holding test* consists in getting the subject to hold his breath without any preliminary deep breaths. This should be done in the following way: A deep expiration followed by filling of the lungs, clipping the nose, and holding the breath as long as possible. The subject should merely be told to breathe out and breathe in as far as possible and then hold the breath. At the end of the test the subject should be asked as to the sensations experienced. A normal answer would be that the individual "had to give up," "felt he would burst." The author has found that people who are likely to suffer from "oxygen want" give up quickly and state that the "blood rushed to the head," "things became blurred," etc. A man without resolution, of course, will give up early. Colonel Flack points out that if a lungful of oxygen is taken instead of air the time of holding the breath will be increased from one and a half to two and a half times and that break down in the first case is due to oxygen want, because when one breaks down in holding the breath on oxygen the symptoms are quite different—headache, sweating, etc. Furthermore, the power to hold the breath is diminished at altitudes. An efficient man at altitudes is a deep breather, whereas the inefficient man is a panter. In the test performed on forty successful pilots the time of holding the breath averaged about 69 seconds, the vital capacity averaging 3,800 c.c. with a minimum of 3,400 c.c. In a number of men sent up for medical boarding, the time of breath-holding was not more than 45 seconds, usually much less. The third test is a combination of the two former tests—the time the breath can be held after exercise. In the unfit, the breath-holding power comes right down, probably by 30 seconds. In the ordinary breath-holding test the standard has been set at 45 seconds. The vital capacity can best be measured by a gas meter, preferably one made by an English firm, as this has the advantage over the German model that its capacity cannot be overshot. In testing officers who had broken down, a number were found to be under the minimum of 3,400 and in some the vital capacity was only 2,800 c.c. Captain Bazett has shown that in addition to the tests mentioned, if the respiration rate is multiplied by the ventilation per minute and divided by the vital capacity, a very good indication is obtained of the power of a pilot to fly. The tone of the abdominal wall may be measured by a U tube manometer filled with mercury, with movable scale. This instrument may also be employed for the sixth test, when the subject is asked to empty the lungs, fill up, blow the mercury to the height of 40 mm. and hold it there without breathing as long as possible. The nose should be clipped. The behavior of the pulse during this test should be noted, a large rise in rate—e. g., from 72 to 132 or 144—is unsatisfactory. Such cardiomotor instability is frequently associated with flying stress and is indicative of the need of rest, the subject not being in a condition to be allowed to continue to fly. The tests described should be used in combination and would be of the greatest value in maintaining the efficiency of a flying station. Every pilot should be examined from time to time and only allowed to do special duty if found fit; in fact, this has been done at one station, with very satisfactory results. These tests would also be of value in measuring trench fatigue, industrial fatigue, and fatigue in women workers; also for the grading of people for positions of trust. With special standards set according to age, they might also be used in assessing the maintenance of physical efficiency in children.

British Medical Journal.

February 8, 1919.

1. A Note on Sodium Morrhuate in Tuberculosis. Lieutenant-Colonel Sir Leonard Rogers, Kt.
2. The Teaching of Obstetrics and Gynecology to Medical Students. A General Survey of the Subjects to Be Taught and of the Methods of Teaching Them. W. S. A. Griffith.
3. A Criticism of Some Modern Methods of Infant Feeding. G. D. Laing.

4. Treatment of Early Syphilis. Robert Gibson.
5. The Treatment of Venereal Disease. Sir Archibald Reid and Surgeon-Commander F. Hamilton Boyden.
6. Prolavine Oleate in the Treatment of Open Wounds. Gwyns Berkeley and Victor Bonney, with Note by C. H. Browning.
7. Some Experiences of the Recent Influenza Epidemic in Bristol. John W. Taylor.
8. Observations on the Influenza Epidemic in the Bristol General Hospital. With Special Reference to the Use of "N. Paine's Siero Antipneumonic" for Prophylaxis and Treatment of Pulmonary Complications. A. J. Lim.

1. A Note on Sodium Morrhuate in Tuberculosis.—Lieutenant-Colonel Sir Leonard Rogers has used a preparation of sodium salts of the unsaturated fatty acids of cod liver oil after extraction by ether in the treatment of tuberculosis. This preparation he has termed Sodium Morrhuate. It is obtained by a process similar to that by which sodium gynecardate is made from chaulmoogra oil, which has proved of great value in the treatment of leprosy. As both tuberculosis and leprosy are produced by an acid-fast bacillus, Rogers, in 1916, suggested the administration of this drug in the treatment of tuberculosis. As, however, in rare cases of leprosy prolonged febrile reactions with temporary exacerbation of the disease may follow sodium gynecardate given intravenously, he hesitated to use it in that way in phthisis. Some gain in weight followed its administration by mouth, but hypodermically it caused painful local indurations. Under these circumstances, the author was led to prepare sodium morrhuate, the subcutaneous infection of which has proved to be almost painless. A year's experience with this preparation in the treatment of leprosy has shown it to be of great value and it would appear, therefore, that the products of chaulmoogra oil possess no specific property in regard to that disease, a fact which lends support to the author's view that the sodium salts of the unsaturated fatty acids of the two oils act in some way on the coating of the acid-fast bacilli, that of tuberculosis having been shown to contain palmitic and other unsaturated fatty acids. In the treatment of tuberculosis a 3 per cent. solution of sodium morrhuate is sterilized in an autoclave and $\frac{1}{2}$ per cent. carbolic acid added. This may be injected subcutaneously with very little pain, and also intravenously. The preparation has been used by the author and also by several other observers and full reports of their work will be published in the *Indian Journal of Medical Research*. In phthisis slight febrile reactions have followed the administration of sodium morrhuate, and occasionally there has been slight hemoptysis, indicating a local reaction in the affected lung tissue, which clearly points to a definite action of the tuberculous lesions. No harm has followed such reactions; frequently the temperature and other symptoms have improved decidedly after them. Their occurrence indicates the necessity of increasing the doses very gradually. The author usually begins with $\frac{1}{2}$ c.c. of the 3 per cent. solution and increases by 2 to 4 minims at each injection, which may be given two or three times a week until reaction occurs; then after a week's interval the dose is reduced. Injections are given subcutaneously until they reach an inconvenient size, such as 2 c.c., when intravenous injections are commenced with $\frac{1}{2}$ c.c. and gradually increased. One observer, Dr. E. Muir of the Kulna Mission Hospital, finds that he gets the best results by pushing the dose until a febrile reaction occurs, and then returning to a small dose and gradually increasing it. In febrile cases the doses should be smaller and increased more slowly. Muir has gone up to 4 c.c. intravenously two or three times a week. This treatment has resulted in reduction and cessation of fever, diminution of expectoration and cough, and steady gain in weight. The tubercle bacilli decrease in numbers and may in time disappear; they commonly show deficient acid staining and a granular or beaded appearance, indicating that they are actually being destroyed within the tissues. As the author's opportunities for clinical trials have been limited, he submits abstracts from the reports of other observers. Muir considers the results, after a year's experience of the new treatment, to be far superior to those produced by tuberculin and "sufficiently encouraging to lead to the hope that the cases under treatment will be finally cured." As the climate at Kulna is extremely inimical to tubercle, spontaneous improvement can be eliminated; yet in all but the most

advanced cases improvement was obtained. In gland cases reactions in the form of fever and local swelling were noted, but were followed by marked improvement. Captain Knowles, director of the Pasteur Institute, Shillong, though not satisfied that the drug is a specific cure, believes it to be the best line of treatment for tuberculosis in general. Remarkably satisfactory results have been obtained in two cases by Major C. Briery, I.M.S., civil surgeon of Peshawar. While duly recognizing the responsibility of bringing forward a new treatment for such a serious and widespread disease as tuberculosis, the author is convinced of the harmlessness of the doses recommended. He draws attention, however, to the necessity for caution in pushing the drug beyond the limits which have so far proved safe. With this caution he feels justified in bringing this remedy before the profession in order that further observations may be made and the indications and contraindications for its use worked out.

Berliner klinische Wochenschrift.

January 6, 1919.

The Famine in Germany.—This subject was discussed in an extraordinary meeting of the Berlin medical societies on December 18, 1918. The meeting took place with J. Orth, president, in the chair. The reports were read by M. Rubner, E. Kraus, A. Czerny, Hamel, A. Weber, L. Kuttner, Beninde, and Wurm, who claimed that the food situation was lamentable. Since 1916 the progressive reduction in the rations has been accompanied by an increase of disease—tuberculosis, pulmonary affections, amenorrhea and sterility, and mortality among infants. The speakers maintained that Germany was the innocent victim of its victors, and unanimously voted, as would naturally be expected, that steps be taken to ask the Allies rapidly and abundantly to furnish Germany with food. If this could not be done the sanitary and moral consequences would result in fearful catastrophe.

The Etiology and Epidemiology of the Grippe.—F. Neufeld and P. Papamarky state that in the absence of reliable documents of the etiology of influenza, steps should be taken in the way of social prophylaxis, namely, to instruct the public as to the danger of contagion from drops of expectoration.

The Etiology of the Grippe.—E. Leschke has at length obtained, after filtration of the pulmonary juices which are then placed for a certain time in an incubator, a growth on broth of corpuscles which were hardly visible in the microscope (magnified 1,500 diameters). The inhalation of this culture of filtered virus produced a febrile process, having the characters of influenza, in several persons. It is to be remarked that this process immediately followed the experimental infection without any incubation period.

Münchener medizinische Wochenschrift.

January 3, 1919.

Heredity in Relation to Ophthalmoscopy.—A. Vogt considers ocular malformations in relation to the laws of heredity. This article confirms in a general way the results of well-known general biological researches, viz., that malformations of the eye are hereditary, become combined, and skip over generations according to Mendel's principles. It goes without saying that heredity is also to be found in normal cases. The ignorance of these laws of heredity resulted in an overestimation of accidental factors for a long time, such as the myth of school myopia, for example. Studied from the viewpoint of the variability of the various causative factors, myopia at present appears to be a phenomenon resulting from a concordant or discordant variation of mathematically definable factors. Thus, the curve of the cornea, likewise the length of the ocular axis, may vary according to the tables of frequency established by Steiger. According to the combinations of these modalities, emmetropia, myopia, or hypermetropia, in given proportions, will result, without any evident or even admissible exogenous influence. Vogt studies the various ocular affections from this viewpoint, as well as the regulating influence exercised by selection in rela-

tion to the variations in the disturbance of the visual functions and those where correction can be obtained by proper therapeutic measures.

Operative Communication Between the Pericardium and Pleura in Cardiac Compression from Serous Inflammatory Exudates.—A. Låwen describes a procedure which assures a durable decompression of the heart by draining the pericardial fluid into the pleural cavity. In case of relapse, the pleural collection thus produced can be easily withdrawn by puncture. The opening between the two serous cavities is made at the most declivous part of the posterior pericardium a little to the outer side of the apex and to the inner side of the left phrenic nerve.

A New Operation for Ascites.—R. Sievers proposes, in order to assure the flow of ascitic fluid, to introduce through the diaphragm a fragment of the aorta taken from a cadaver. The fluid is thus drained constantly off into the left costodiaphragmatic sinuses, the flow being kept up by the respiratory movements of the diaphragm. The left pleura assures the regular absorption of the fluid.

Deutsche medizinische Wochenschrift.

January 1, 1919.

On Tissue Regeneration.—A. Bier, in this, his eighteenth article on regeneration, considers the biology of the crevices of the connective tissue and tries to establish a relationship in the histologic make-up not only between the synovia, the synovial sheaths of the tendons, and serous bursæ, but also includes the connective tissue crevices with these serous membranes. In all these crevices a lubricating fluid exists whose composition is sometimes that of lymph, at others more viscous like synovial fluid, when the lining cells of the cavity secrete a fluid more mucous in quality. The secretion depends largely upon movements, pressure, or traction to which a given anatomical region is subjected, but these conditions are not absolutely essential for the secretion of mucus to take place. Bier brings forward examples of serous bursæ which formed, although the parts were not subjected to any mechanical irritation or movement and all that was necessary was the presence of a cavity maintained by keeping it filled with a physiological salt solution in order to transform it into a serous bursa. In this respect, Bier refers more especially to the removal of muscle or bone tumors where the resulting cavity after extirpation was filled with normal salt solution. As to the contents of these serous bursæ *a vacuo*, they consist of mucine unquestionably of the synovial type and can be distinctly distinguished from all other types of mucine.

On the Frequency of the Weil-Felix Bacillus.—L. Dienes comes to rather vague conclusions from the results he has obtained in hemocultures made from patients with typhus fever. While at the beginning of the war the Weil-Felix proteus was very frequently found, it would seem that at present it is much more rarely discovered. The presence of this organism appears to be closely related to a dissemination of disease by the Russians, and Russian prisoners did not show the presence of the proteus after they had sojourned for some time in Germany. The reaction of the Weil-Felix proteus is not a reaction of the specific bacillus of typhus, but rather a humoral change which arises during the evolution of the disease in circumstances which are as yet not clear. (The article is very confused and difficult of comprehension.—The reviewer.)

Wiener medizinische Wochenschrift.

December 21 and 28, 1918.

Consultation Institutes for Venereal Disease.—E. Finger proposes to form an organization of consultation posts with the object of intensifying the antiveneal struggle. This system is already working in Germany under the protection of the institutions of national insurance. The work to be accomplished by the consulting institutes is gratuitously to enlighten all persons afflicted with venereal disease as to the necessity of treatment, the degree of contagiousness of his or her affection, etc. As these institutes only have prophylaxis

as an object, the persons are sent to their own physician to carry out the treatment, the institutes' part being to advise the people and superintend their treatment by means of a system of information which puts the public into relation with the entire medical corps.

The Primary Treatment of Cerebral Wounds by Gauze Packing and Lumbar Puncture.—F. Demmer combines these two procedures and thus assures the best conditions for repair. The gauze packing prevents infection from taking place, as well as cerebral hernia, while repeated lumbar puncture prevents the occurrence of compression, etc. The wound being thus undisturbed, the process of repair begins at its edges while granulations spring from the bottom. Then a surface cicatrix forms which takes the place of the tissue destroyed without causing an irritant action (epileptoid), as is the case with cicatrices which are allowed to develop without these precautions.

The Potato Cure in Cardiac Hydropsy.—J. Lipiner, in this article continued from a previous issue, demonstrates the advantages of this diet. To explain the mechanism of its action, the writer invokes the small volume of the food, the relative restriction of liquid, dechloridization, and lastly, and above all, the potassium contents of potatoes. The action of this tuber is particularly diuretic and cardiotonic.

Brazil-Medico.

November 9 and 30, 1918.

Influenza in Brazil.—The Oswald Cruz Institute has naturally taken up the study of the pandemic as it affects Brazil and Dr. de Beaupereira Aragao publishes a preliminary report. The first cases to be reported in Rio were at once subjected to investigation at the Hospital di Misericordia, where they had been interned, and the research has been continued. The sputum finds have in no wise differed from those in Europe and North America. Pfeiffer's bacillus was present in less frequency than the pneumococcus, streptococcus and several other microorganisms. In 18 febrile cases blood cultures were attempted and the pneumococcus and *Streptococcus hemolyticus* were found in one case each. In experiments with small animals the inoculated sputum proved to be deadly, while sputum and other secretions when directly applied caused no reaction. The animals did not perish of any distinct malady but from various secondary infections due to the pneumococcus and other bacteria. In the same periodical for November 30, Drs. Da Cunha, Magalhaes and Fonseca publish a second communication from the Institute. A special small diplococcus has repeatedly been isolated from the secretions of the throat and has also been recovered by hemoculture. This organism was readily cultivated and inoculated into laboratory animals. Every attempt was made to secure pure cultures and the latter were also filtered. The material used in inoculation was also sown in certain culture media. Other inoculations were made with patient's blood. In monkeys the culture caused a type of fever without complications. The infection was transmitted in series from one guinea pig to others, always with the same result. Control experiments with Pfeiffer's germ gave negative results. The experiments with monkeys were simple but conclusive. One injection always caused after very brief incubation a fever of about two degrees Centigrade and when after recovery the inoculation was repeated the animal was found immune. Finally the monkeys could be immunized by a vaccine although these experiments have not been brought to a conclusion. In fine the work of the Institute thus far agrees in its finds with those of Nicolle in France, namely, that the infectious principle is a filtrable virus, but goes further in the recognition of the minute diplococcus as the cause of the pandemic.

Revista Española de Medicina y Cirugía

December, 1918.

Radium in Cancer of the Upper Air and Food Passages.—Botey has used radium for these conditions since 1906, having begun with cancer of the nose. In superficial cutaneous epithelioma of the latter, excellent results are obtained by the use of radium in sessions

of 30 to 60 minutes each. Ordinarily half a dozen sessions at intervals of 4 to 7 days suffice for cure. Of intranasal growths treated the great majority were sarcoma or myxosarcoma. Direct applications were made with but little filtration. A Dominici tube enclosed in one of brass is supported with a tampon, and left in the nose for from 6 to 24 hours. After 3 or 4 sessions the sarcomatous tissue melts away. Instrumental removal of parts of the tumor may be used in association with radium. Recurrence sometimes occurs but may be retarded by radium. In endonasal epithelioma results are mediocre, and this is also true of the same lesion in the mouth with occasional exceptions. In the fauces the only growths to be benefited are fibroadenomas and adenomas. In malignant growths in this region any benefit is transitory. As for the larynx it has always been impossible to maintain a tube in its interior and the growths here are attacked through the skin. But results are poor and the author has spent much time in perfecting a technique in which intubation with or without tracheotomy serves for the introduction of a radium tube. He has made numerous applications of radium in this manner in which the external application is added as synergist. There is a conflict here because on the one hand the tolerance of the larynx for this treatment is limited and on the other hand large doses are in theory indicated. The reactions of the tissues are hostile to the development of the growth and favor autolysis of the cancer cell as well as production of fibrous tissue. It is believed, however, that radium sometimes favors recurrence and all in all the author would limit this treatment to small and circumscribed lesions. Radium after extirpation despite its alleged unfavorable action on extensive growths in the direction of recurrence is also held to prevent the first beginnings of recurrence, this duality being difficult to comprehend. In tumors of the esophagus radium is an excellent palliative. The author treats cases of this nature by the application of tubes with the aid of the esophagoscope for the space of about 6 hours, repeating after an interval of from 4 to 7 days. The size of the tube is increased progressively. The sound and catheter can be used as the growth recedes.

Boletina de la Asociacion Medica de Puerto Rico.

December, 1918.

Influenza in Puerto Rico.—Dr. Del Valle Atilas states that on June 13 last a Spanish steamer which sailed originally from Barcelona and touched at various other ports made port at San Juan. On board were five convalescents from influenza. The total number attacked had been thirty. The steamer had been in transit for thirty-two days, which apparently antedated the Madrid outbreak by a few days and seems to show that the disease could already have been present at Barcelona, Valencia, or Cadiz before it broke out at Madrid, as the boat had touched at the two last named. In the first authenticated epidemic of influenza in the United States in 1647 the disease was ostensibly brought from Valencia and hence known as Spanish catarrh. In the recent visitation San Juan was first attacked, then other cities and villages, and finally the rural districts. After the first visitation to the metropolis there was a recrudescence; by this time man to man transmission was no longer in evidence. At present there are only estimates of morbidity. It is computed that 100,000 victims were affected at the same instant in the island, or more than 8 per cent. of the entire population. Of 250 physicians in practice in the island at least 150 contracted the disease. The total number of people attacked during the entire epidemic is set down as 40 per cent. The total number of deaths from the disease in the month of November is known to have been at least 1,570. The total mortality on the island for 1917 for that month was 2,864, while for November of 1918 it was 5,284, or nearly double the first figure. These numbers justify the assumption of 4,000 deaths as the total tribute of the epidemic for Puerto Rico. It is by no means certain, however, that these figures comprise all the complications and sequelæ of the influenza, and a passage by the author seems to imply that at least many of these complications may not have been set down as gripe deaths.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held January 28, 1919.

DR. SOLOMON WIENER IN THE CHAIR.

Cerebral Hemorrhage Complicating Pregnancy.—Dr. EDWIN G. LANGROCK reported this case. He stated that the woman was a 1-para, 23 years of age, who was perfectly well until 7 P. M., on May 26, 1918, when she had a convulsion and fell to the floor. She became unconscious immediately and never regained consciousness. He saw the patient at 12.30 A. M., after her arrival at the Harlem Hospital, at which time her systolic blood pressure was 180, diastolic pressure 120, and pulse rate 54. She had Cheyne-Stokes breathing and her respirations were very poor. The catheter obtained only a few drops of highly colored urine. There was slight edema of the legs and more marked edema of the ankles. The whole right side of the body showed extreme spasticity, as did also the left lower extremity. The neck was slightly rigid. The left pupil was widely dilated, the right pin-point, and neither reacted to light. There was no corneal reflex. Babinski's sign and exaggerated knee-jerks were present on both sides. The lungs showed moist râles throughout, and the heart sounds were feeble and very irregular. Abdominal examination showed an eight and one-half months' uterus with floating head. Vaginal examination showed the cervix two fingers dilated, soft and thin. The fetal heart rate was 148, and of excellent quality. Lumbar puncture was extremely difficult and only a few drops of blood fluid were obtained. The diagnoses considered at this time were eclampsia and intracranial pressure. The latter was thought to be due to either: (1) Cerebral hemorrhage from eclampsia; (2) intracranial injury due to the fall following the convulsion (which might have been eclamptic in origin), or (3) to a medical cerebral hemorrhage as, for instance, the rupture of a blood vessel, the seat of endarteritis due to syphilis. The woman grew steadily worse, ceased to breathe at 3 P. M., and a cesarean section was immediately performed. The baby was resuscitated without much difficulty. It weighed 6 pounds 14 ounces, and left the hospital in three weeks in good condition. The perplexing questions were these: (1) Was the convulsion due to eclampsia or cerebral hemorrhage? (2) Was the cerebral hemorrhage traumatic, from her fall on the floor following her convulsion? (3) If the patient was not eclamptic and if the condition was not traumatic, what would produce a cerebral hemorrhage in a woman 23 years of age showing no signs of syphilis? The post mortem examination made by Dr. Cassasa of the Medical Examiner's staff showed the brain to be the seat of a most extensive hemorrhage, the ventricles all being filled with blood. The vessels at the base were hypoplastic. The heart was small and the aorta not of normal caliber. The whole cardiovascular system showed distinct hypoplasia. On this finding and several others the diagnosis of status lymphaticus was made. The liver and kidneys showed no evidence macroscopically or microscopically of eclampsia. The unusual features of this case were: (1) A case of status lymphaticus complicating hemorrhage and pregnancy with sudden death due to cerebral hemorrhage. (2) Post-mortem cesarean section. (3) Intricacies of diagnosis involving eclampsia.

Rare Complication Following Normal Delivery.—Dr. ARTHUR STEIN reported this case for two reasons. First, because it was a rare and interesting case and, second, to secure perhaps some enlightenment in regard to the diagnosis. The patient was 31 years of age, the mother of two children, and had always been healthy. The husband had had gonorrhea several years prior to her first confinement but was perfectly healthy at this time. She went into labor on June 11, 1918, at 2.30 A. M. without having been examined by any one. Her confinement was regarded as most normal in every respect. Immediately after bringing the patient back to bed she complained of excruciating

pains in the right sacroiliac region, and these pains promptly reached such a state of intensity that the slightest touch in that region caused her to scream with agony. Concurrent with these pains there was an immediate rise in temperature, starting at 101.6° and the following day reaching 104° F. The pulse was 140. The patient kept up this temperature and pulse with remittances, as in real sepsis, for nearly two months. At the end of July her temperature was practically normal, but her pulse was still around 130. At the onset of the sacroiliac pain the patient was carefully examined by an orthopedic surgeon who failed to find any lesion of the bones. On the supposition that there was some slight dislocation of the sacroiliac ligament she was tightly strapped with adhesive plaster. Examination of the patient's blood at the beginning of her illness showed *Streptococcus pyogenes*. She received antistreptococci injections for three weeks, as much as 20 to 30 c.c. a day. During the second week after delivery she developed a swelling of the left knee, which on puncture was found to contain a purulent material in which *Streptococcus pyogenes* was also present. At the end of July the patient was still unable to walk on account of the marked pain in the sacroiliac joint, but she was permitted to leave the hospital on crutches. X-ray pictures showed no abscesses of any kind and no destruction of any sacroiliac ligament. Numerous vaginal examinations were made during the course of the patient's illness, all proving negative, and the uterine secretions were also found to contain no signs of any virulent infection. Two weeks after leaving the hospital she again had a high temperature and pulse. When the speaker again saw the patient in the middle of September (three months after delivery) there was a large bulging mass in the right groin above Poupert's ligament. The right thigh was swollen and edematous in its anterior aspects, up to the middle of the thigh. Internal examination revealed the presence of a large abscess originating apparently in the sacroiliac region and working its way down and outward toward Poupert's ligament. The patient was then operated on with the result that after another six weeks of hospital care she was restored to perfect health. A large amount of pus was evacuated which contained *Streptococcus pyogenes* and also *Staphylococcus pyogenes albus*. The abscess was traced to the right iliac joint. Dr. Stein stated that he had reported this case rather in detail because he was uncertain whether this process was due to an old osteomyelitic focus in one of the pelvic bones or whether the whole process was due to some other cause. The surgeons with whom he had consulted were of the former opinion, there being no signs of any other infection and tuberculosis being practically ruled out.

Three Cases of Unusual Intestinal Obstruction.—Dr. ARTHUR STEIN reported these cases. The first patient was a woman 24 years of age who gave an absolutely negative history. Six days before she was admitted to the hospital she was suddenly seized with cramp-like pains in the whole lower abdomen and back. These pains lasted for a day or two and then disappeared. They returned again the evening of her admission to the hospital and were accompanied by vomiting and high fever. Examination showed extreme but even distention over the entire abdomen, and marked tenderness on the slightest pressure; the pain, however, was more localized in the right hypogastrium, more especially over McBurney's point. It seemed that the right adnexa were enlarged and that there was a mass which might originate in them and have some connection also with the appendix. A tentative diagnosis was made of either an appendiceal abscess or a ruptured pyosalpinx. Upon opening the abdomen through a median incision the uterus and adnexa as well as the appendix were found to be perfectly normal. To their surprise the colon ascendens was seen to be extremely distended and a few fresh fibrinous bands were found gluing the small intestines together. The colon ascendens and transverse colon were then brought into view and three very small omental adhesions which held the ascending colon down were cut and ligated. The distention of the colon did not subside, however, after these bands were cut and it was therefore deemed advisable to inspect the whole colon down to the rec-

tum. The whole colon was therefore brought out of the abdomen, but no further adhesions were found. No signs of old inflammation or tuberculosis were found and the abdomen was closed. The patient had a rather stormy convalescence but after four days' constant effort on the part of the speaker and his assistants she began to improve and made a perfect recovery. This case was reported not because cases of intestinal obstruction were rare but because the origin was a rare one and the patient's history gave no clue to the condition that led up to the obstruction. The second case was that of a woman 28 years of age, married, who was admitted to the Harlem Hospital on January 26, 1918, in an extremely serious condition. Her former history was of no importance with the exception of the fact that she had undergone a laparotomy for uterine fibroid one year prior to her admission to the hospital. Since that operation she had never menstruated. Twelve hours previous to her admission to the hospital she was seized with severe abdominal pains and vomiting, her bowels moved, and her appearance was that of acute illness. The abdomen was markedly distended and extremely tender to the touch. No free liquid was found on percussion and no palpable masses could be felt. The blood examination showed 14,000 white cells, 89 per cent. polymorphonuclears, and 11 per cent. lymphocytes. A diagnosis of acute intestinal obstruction was made. Upon opening the abdomen some free fluid escaped. A loop of small gut was found firmly adherent to the pelvis and all the intestinal loops below this were greatly distended. This adherent loop of small gut produced a volvulus in such a way that a fold of mesentery tightly compressed the cecum. The cecum and appendix were found lying together underneath a fold of the mesentery to the left side of the abdomen. The appendix was quickly removed, and on freeing the adherent loop of intestine a small amount of fluid escaped from a pin-hole opening, which was closed with three purse-string sutures of linen. The volvulus was untwisted and the whole bowel carefully inspected, but no gangrenous areas were found. The bowel was returned to the abdomen and the abdomen closed in four layers, after a cigarette drain had been inserted. The patient received a stomach lavage of water, followed by sodium bicarbonate while on the operating table and one ounce of castor oil was administered through a tube. The patient's condition remained practically unchanged for two days after the operation. She vomited and was in great distress and all known remedies failed to induce bowel movement. Upon the fourth day following operation her condition became so alarming that a colostomy was done by means of a McBurney incision. In spite of all efforts the patient died. The post-mortem findings were caseous pneumonia in the right upper lobe with abscess formation in the center, acute localized peritonitis, necrotic ileum, and partial obstruction of the large bowel. There was also a specific aortitis. The third patient was also a woman 28 years of age, married, who had been operated on two years previously, the operation being gynecological, though none of the details were known to the patient. When the speaker first saw her she presented all the symptoms of acute intestinal obstruction. At operation, upon trying to excise an old laparotomy scar, a small loop of intestine, about fifteen inches in length, was found lying directly underneath the skin. The hernial ring through which this intestine must have escaped at the time of her previous operation was at the upper end of the old incision. It took the speaker exactly three-quarters of an hour to loosen the loop of intestine from the skin. He was then able to incise the hernial ring and to replace the intestinal loop which was not so black as to indicate resection. The excision of the hernial ring and the closure of the abdomen followed. The patient made an uneventful recovery.

Large Cauliflower Carcinoma of the Cervix in a Woman Twenty-three Years of Age.—Dr. ARTHUR STEIN reported this case. He stated that the patient was seen by him in September, 1918, when she gave a history of having had two children and one miscarriage. Menstruation had been normal in former years, but of late she had been bleeding profusely and constantly. About six months previously she had first noticed a

slight irregularity in her menstruation. She went to a physician who gave her some internal medicine but did not examine her. Four weeks before the speaker saw her she consulted another physician who curetted her and diagnosed her case as one of uterine polyp. The patient seemed very sick and anemic. Upon introduction of the speculum into the vagina, a large, irregular, cauliflower-shaped mass originating in the cervical tissue was found. The diagnosis of cauliflower carcinoma of the cervix was easily established. Owing to the poor condition of the patient, it was not considered advisable to perform the radical (Wertheim) operation, but merely a total extirpation of the uterus and adnexa. Some glands around the common iliac artery on both sides were felt to be enlarged, but because of the poor condition of the patient and the deep seat of the cancer they were left behind, as their removal would have prolonged the operation considerably. The carcinomatous growth was about the size of a small child's fist, originated in the anterior cervical canal, and had destroyed practically the whole anterior lip, the posterior lip being apparently free. The microscopic report confirmed the diagnosis of carcinoma. This case was reported for two reasons: First, because of the extreme rarity of carcinoma of the cervix in a woman of that age and because of the malignancy of this type of carcinoma. The patient in this case was now dying of general carcinomatosis. The second reason was to emphasize the extreme importance of examining every woman who came to one's office giving a history of irregular bleeding without regard to her age.

Dr. JOHN O. POLAK stated that he had seen three cases of infection of the sacroiliac joint following labor during the past winter, and the interesting feature in these cases was that all three women were delivered spontaneously. It was difficult to say how infection reached the sacroiliac joint. An interesting point brought out in Dr. Stein's cases was that the temperatures were very similar to those of thrombophlebitis. A point in connection with infection of the sacroiliac joint was that in the presence of this condition there was pain on motion of the uterosacral ligament. In the three cases referred to the condition did not come on as quickly as in the case Dr. Stein reported; in these three cases the trouble came on in five, six, and eight days, respectively. In reference to the case of carcinoma of the cervix in a woman twenty years of age, they had had a case in a woman 23 years of age who had an immense cauliflower growth. The uterus was removed and the patient subjected to radium treatment, yet within two weeks after the operation there was a recurrence and the woman died in six weeks. The entire pelvis was filled with the growth, showing the extreme rapidity of growth of this type of carcinoma in a woman of this age.

Extraperitoneal Cesarean Section for Contracted Pelvis.—Dr. GEORGE L. BRODHEAD reported this case, a primipara, who was admitted to the Harlem Hospital on Nov. 20, 1918. The patient was suffering from a marked toxemia, as evidenced by albumin and casts, edema of the legs and lower abdomen, and raised blood pressure. There was no headache, visual disturbance, or epigastric pain. The pelvis was slightly juxta minor and the head in R O position was just dipping in the brim of the pelvis. The fetal heart was strong and regular. The membrane had ruptured two days before admission, but the liquor amnii was clear and had no odor. The patient's temperature on admission was 102.5° F., the pulse 192.8. After a twenty-four hour test of labor, the patient being tired out and no progress having been made, except that the cervix was dilated, it was decided to perform extraperitoneal cesarean section. A median incision was made from the navel to the pubis, but the bladder fold being much higher than usual, the incision had to be carried up one inch above the navel. The peritoneum was incised and the parietal peritoneum sutured to the uterine peritoneum for about six inches in the form of an ellipse. The uterus was incised, foul-smelling, green amniotic fluid escaping. The child was extracted by the breech in good condition. On account of moderate bleeding the uterus was packed with iodoform gauze and closed with the usual interrupted chromic gut sutures, and the peri-

toneum and abdominal incision closed in the usual way. For four days following the operation the patient's temperature reached 102° to 103° F., but on the fifth day it came to normal and remained so. The baby weighed 9½ pounds. Both mother and baby left the hospital in good condition.

Uterine Inertia.—Dr. GEORGE L. BRODHEAD reported this case. He said the woman, a multipara, was admitted to the Harlem Hospital on November 18, 1918. She had a normal pelvis and her previous labors had been short and easy. She stated that the membranes had ruptured spontaneously five days before admission and the night before she had bled a moderate amount. Pains had been present since the day before. No life was felt on this day, though the fetal heart was heard at 9 a. m. in the right upper quadrant. The cervix was long and soft and admitted two fingers. The presenting part could barely be reached by vaginal examination and no diagnosis of presentation could be made, though it was believed that the presentation was not vertex. Meconium-stained, slightly foul-smelling, fluid was draining away. The patient's general condition seemed to indicate no intrauterine hemorrhage and the diagnosis was inertia with dead fetus. The best treatment seemed to be the introduction of a large No. 5 de Ribes bag and then after full dilatation the method of procedure could be determined upon. There were no pains during the next eighteen hours and the patient was in good condition. At 4 p. m. November 19, the cervix was four fingers dilated, the head in R O P position above the brim, and there was a foul discharge from the vagina. As no progress was being made craniotomy was decided upon. The blades of the cephalotribe were applied but at once slipped off. The right foot was seized and easily brought out. Traction on the macerated foot failed to cause advance and the cervix was found thick and contracted about the thigh of the fetus. The patient vomited, had a chill, and a temperature of 102° F. (rectal). The pulse was rapid, and the woman complained of backache and was very restless. A hypodermic of morphine sulphate (one-quarter grain) was given and the patient put to bed, where she soon felt as well as before the operation. At 8.30 p. m. she had two hard pains and in five minutes the child was born. The fetus was not large, there was no hemorrhage and the patient was in good condition. There was a mild febrile puerperium, after which recovery was uneventful.

Dr. ABRAHAM J. RONGY took exception to the terming of the operation Dr. Brodhead described as extra-peritoneal; it was really a transperitoneal operation. In an extra-peritoneal operation the uterus was entered below the peritoneal surface. Sometime ago he had had to perform a cesarean section on a woman whose scar from the first cesarean section was situated below the umbilicus. He made the usual high incision and to his surprise found that the entire lower part of the anterior wall of the uterus was adherent to the lower abdominal wall, corresponding to the old scar. This brought out the point that if one did a cesarean section on a patient who had had a previous cesarean section and the scar was situated below the umbilicus, he should always bear in mind the possibility of the first operation having been of the transperitoneal variety and should not make a new incision but should go through the old one.

Dr. POLAK said that this point was well brought out by Dr. Green of Boston, who had reported the largest number of cesarean sections on one patient, through the same scar, namely, nine. He used Hirst's modification of the extra-peritoneal, and probably the case referred to by Dr. Rongy was one of these. One objection to this operation was that a number of these cases became retroflected. In this operation one was more likely to have leakage and hence he had abandoned it. He would consider that as Dr. Brodhead had described the operation it was transperitoneal rather than extra-peritoneal.

Observations on a Series of Cases of Cesarean Sections Done at the Long Island College Hospital During the Past Six Years.—Dr. ALFRED C. BECK presented this communication in which he presented the detailed report of 57 personal cases, a morbidity study of 107 consecutive sections, and an improved technique for this

operation. He concluded that cesarean section was at times the best means of obtaining a good result in serious obstetric difficulties other than marked disproportion. In his personal series of 37 cases only one mother died, and her death in all probability was due to eclampsia. When the operation was done before term there was great danger of losing the premature infant. It should not be performed in the interest of the child in such cases. There was a gross mortality of 3.8 per cent. in the entire series of 105 consecutive cesarean sections. The mortality of 16 cases previously handled on the outside was 16 per cent. The mortality in 86 cases treated wholly in the hospital was slightly over one per cent. The morbidity varied from 13 to 70 per cent. according to the absence or presence of conditions which governed morbidity. With this high morbidity we should be more fearful of mortality than the actual mortality in this series would lead one to anticipate. By completely sealing off the peritoneal cavity from the closed uterine incision a definite barrier was placed in the path of those infections which reached the peritoneum through the infection of the wound in the uterus. This was accomplished by the lapping of the peritoneal flaps as described by the author. This technique should be the one of choice even in elective cases. (See *American Journal of Obstetrics and Diseases of Women and Children*, February, 1919, p. 197.)

Dr. SAMUEL W. BANDLER said that the paper showed them a very distinct addition to the types of cesarean section, but there was one objection that must be raised, namely, that it was too difficult for the clean and safe cases, and possibly did not afford sufficient protection for the not clean cases as compared with extraperitoneal cesarean section. He doubted if it was as safe from the standpoint of infection as the extraperitoneal method, but in doubtful cases it was certainly more easily and readily done. The ordinary transperitoneal operation with the higher incision above the umbilicus and the much easier extraction of the fetus and placenta was, it would seem, the better method for clean cases. If the general practitioner could only be taught to be aseptic in his examinations, then even if a case had been in labor for hours and if the membranes had ruptured, the higher operation would be generally a safe one. Dr. Bandler said that while he did not wish to criticize there was one very important surgical feature that had been omitted in connection with the description of this operation, and he thought this criticism held with practically all the methods in use. This was a point of which he had wished to speak in connection with Dr. Stein's case in which he found the coil of intestine immediately beneath the skin of the abdomen. That meant that the peritoneal suture broke after the operation, which opened the peritoneum and also the muscle and fascia, and up came the intestine against the skin. Why, in doing a cesarean section, did they not unite the endometrium by a separate suture, just as in doing a gastroenterostomy or lateral anastomosis they must unite the mucous membranes? He could not understand why they had been so slow about this feature of the operation, for it was both surgical and safe, and made the rest of the cesarean section simple and easy. Dr. Bandler then described in detail his method of suturing the endometrium by which the cavity of the uterus was walled off completely from the subsequent field of operation. After this procedure the exposed raw surfaces made by the uterine incision scarcely bled a teaspoonful, especially since pituitrin was administered by hypodermic at the beginning of the operation. A series of No. 2 iodized catgut sutures were then passed through the peritoneum and muscle of one side, taking in the thickness of the uterine wall but not going into the endometrium, passing out in the same way on the opposite side. The sutures were all prepared before the operation was begun, and thus five or ten minutes were saved, the whole procedure from the beginning until the patient was in bed taking scarcely thirty-five minutes. He did not cover the knots by uniting the peritoneum on the two sides since it put too great a strain on the peritoneum and was too likely to tear out. He passed a No. 1 or No. 2 chromic suture Connell fashion to the right and to the left between every suture previously placed in the wound. In his first cesareans the suture uniting the mucous membranes did

not pass through it but was passed through the muscle wall just above and parallel to it from side to side, like a subcuticular stitch. He thought that if either of these methods was followed out the results were bound to be better. If infection took place through the stitch punctures, we did not have simply a peritonitis; we had a metritis. Merely covering such an infection with peritoneum, as was done by Dr. Beck's method was not sufficient guard against the spreading of infection. Dr. Beck's method being done in the lower segment of the uterus, nearer to the cervix, was nearer to the area of infection if bacteria had entered the uterine cavity. As to a choice between Dr. Beck's method and the extraperitoneal route, he was seriously in doubt whether in the cases that were not aseptic it was safe to follow his method without some form of drainage. If he were to follow his method in a doubtful case he would prefer drainage.

Dr. WIENER asked those who continued the discussion to include Dr. Bandler's remarks as a part of the subject under discussion. It would appear that Dr. Bandler's suggestion was a return to an older method which they had largely abandoned because it had been considered a bad practice to have the sutures enter the uterine cavity, just as in a complete laceration of the perineum it was not advisable to have the sutures enter the lumen of the rectum.

Dr. BRODHEAD asked if, in performing this kind of cesarean section with the low incision into the uterus, one must convert a vertex into a face presentation or it was necessary to use the forceps, whether it would not be safer to wait before giving the pituitrin until after the extraction of the child, since one sometimes had difficulty in getting the child out after he had given pituitrin before the usual incision. He also asked Dr. Bandler why the suture of the mucous membrane stopped the hemorrhage. He thought it would seem more reasonable to suture the muscular layer. He agreed with Dr. Bandler that in cases in which frequent examinations had been made he would rather do one of the extraperitoneal operations, feeling that it was safer, and he questioned whether in any clean case this operation had advantages sufficient to make up for the increased time it took to do the operation in that particular way.

Dr. Bandler replied that he did not suture the endometrium because it stopped bleeding from the uterine wound; it kept the blood which was being poured out into the uterine cavity from going into the wound and made the remainder of the operation exceedingly simple. When he first developed this technique he passed a continuous suture close to the endometrium all the way through the length of the wound and the remaining sutures were passed as above. He thought the separate union of the mucous membrane an important step in the operation. He believed the secretion from the uterine lining, if it passed up between the muscle layers, might interfere with the union of the muscularis and might digest the stitches, which was another reason for uniting the endometrium, as the first step of repair after incision and delivery.

Dr. POLAK said he did not see what happened to the endometrium after Dr. Bandler's way of suturing, how he took it in the suture. He must go through the decidua and pass through the endometrium and it seemed to him that he would thus make an avenue of infection instead of preventing it. The reason he gave up the other method was because the uterus became fixed high up and on reopening the abdomen one invariably found adhesions to the uterine scar and the abdominal wall in cases operated on by the other method.

Dr. I. C. RUBIN suggested that the reason the method of suture of the mucous membrane described by Dr. Bandler was abandoned might be answered by saying that to-day the surgeon operated in an aseptic field, while in former days any laparotomy was a serious danger. He thought that the method described by Dr. Bandler was less likely to be followed by infection than the method more generally employed, and that the hemostasis that it afforded also conduced to good results, and for these reasons it recommended itself rather highly.

Dr. RONGY expressed the opinion that there was no question but that Dr. Beck had brought them something

new to-night. However there were a few points that must be considered in conjunction with his operation in its relation to future pregnancies. He thought that possibly there was a likelihood of more frequent spontaneous rupture of the scar when it was situated in the lower portion of the uterus. The abdominal incision below the umbilicus had also the disadvantage that post-operative hernia took place more readily in the lower portion of the abdominal wall than in the upper portion. As to the suggestion of bringing the catgut through the mucous surface in order to control hemorrhage from the uterine cavity, he felt that the danger of creating a source of infection from the uterus was too great and at all times suturing material should be kept from the uterine cavity during the performance of cesarean section.

Dr. POLAK stated that he had had about fifteen Krönig operations and he had been able to close the uterine wound completely in all but one. He thought they did not get infection from the spill of amniotic fluid but they did get it from the inside of the uterus. They had had seven autopsies following cesarean section and every one had presented the same picture, that was the uterine wound had been more or less open and the suture cut, and the infection had followed the suture tracts from the inside of the uterus outward. It seemed to him that Dr. Beck's operation was nothing more than an improvement on the Krönig technique. This operation had not the disadvantages of the extraperitoneal operation, which was a much more difficult operation technically to do. One point of importance was that they got the incision low and there was a little trick of accomplishing this. After they threw the bladder up against the pubis they took a gauze pad and placed it against presenting parts and threw the uterine segment up, and this in conjunction with the Trendelenburg position enabled one to make the incision in the lower uterine segment. Convalescence after this operation had been very smooth, there being less intestinal and less abdominal disturbance than in the usual cesarean operation.

Dr. BECK, in closing, related a part of his cesarean experience in refutation of Dr. Bandler's remark that this procedure was too difficult for simple cases and not safe enough for questionable cases. He said he thought he had done at least 35 operations according to the technique described by Dr. Bandler, with the exception that the endometrium was carefully avoided in the suturing of the wound. He felt that closure of the endometrium was accomplished by the deep sutures which passed through the entire thickness of the muscle down to, but avoiding, the endometrium. As most of these patients came from the prenatal clinic, the usual factors which rendered cesarean section dangerous were absent, that was, the operation was performed as an elective procedure or when a test of labor was given vaginal examinations were not made. After reviewing his results from the standpoint of morbidity, he concluded that even in elective cases there was danger of peritonitis and every effort should be made to prevent this complication. As was shown in this report of 105 cases from 13 to 70 per cent. had a definite marked morbidity. A suturing of the endometrium as suggested by Dr. Bandler, it seemed to him, would favor the extension of infection to the uterine wound, as the suture passed into the uterine cavity. From the results of this procedure, as shown on examination of the few patients upon which the operation just described had been performed, it would seem that there actually was a complete peritonealization of the uterine wound, as in each instance the uterus was in good position and no evidence of adhesion was noted. Concerning what Dr. Brodhead had said, it used to be their custom to give pituitrin just before they started the abdominal incision. They now gave the injection just before they started the uterine incision. As a result the incision was completed and the child extracted usually before the drug had taken effect. By giving it in this way they felt that it did not interfere in the way suggested by him and at the same time it greatly aided in the control of hemorrhage immediately following the operation. As to Dr. Rongy's remarks, they seldom heard of a ruptured vaginal cesarean section scar. The incision in the operation he had described passed through prac-

tically the same tissue as did that in a vaginal cesarean section. One might therefore expect results with regard to rupture similar to those in vaginal cesarean section.

SECTION ON PEDIATRICS.

Stated Meeting, Held April 11, 1918.

DR. HERBERT B. WILCOX IN THE CHAIR.

The Active Immunization of Children Under Eighteen Months of Age with Diphtheria Toxin-Antitoxin.—Dr. ABRAHAM ZINGHER presented this communication. He stated that the presence of diphtheria in civil communities presented an important problem and quoted statistics showing that from 1900 to 1910 there was an average of 1900 deaths annually from diphtheria, and that of this number 77.5 per cent. occurred among children under five years of age. The mortality from diphtheria was higher than that from measles and scarlet fever combined. Attempts to isolate and control carriers and the administration of antitoxin had failed to control the disease as it had been hoped they would do. After reviewing the work they had done on the Schick test for the past four and one-half years and the conclusions they had reached, Dr. Zingher presented a chart showing the way in which 101 subjects that gave a positive Schick reaction, and were injected with toxin-antitoxin, gradually came to give a negative reaction. Three weeks after the first injection of toxin-antitoxin, 30 per cent. had become immunized, and 70 cases had failed to respond. A week later still more had responded and gave a negative Schick test. At the end of seven weeks only 19 were found to be slow in developing immunity. Of the 19 who were left in the institution at the end of eleven weeks, finally, all showed a negative Schick test. In making an investigation as to the duration of active immunity the speaker visited 30 small institutions and gained permission to test the children and to administer the immunizing doses of toxin-antitoxin to those that reacted positively to the Schick test. Charts showed how these children gradually developed immunity. When the three doses of toxin-antitoxin were given, 85 to 95 per cent. responded by developing a negative Schick reaction, and a year later retests showed that this active immunity still persisted. Later a retest at two and one-half to three years showed that the immunity persisted. This work had been carried out not only in institutions but in schools, with the consent of parents, and in milk stations and day nurseries. Interesting and important results were obtained at the New York Foundling Asylum, where children ranging in age from a few weeks to eight years were tested and immunized. As had previously been pointed out, the infants of immune mothers were often immune at birth but generally lost this immunity later during the first or second year of life. The charts showed the results in three groups of mothers and infants. In the first group the mothers and infants from two to six months of age were both immune; they were retested six months later, and, while the mothers were still immune, the infants had become susceptible, as shown by their giving positive Schick reactions. In the second group of cases the mothers were immune and the infants, from six to nine months of age, susceptible. The susceptible infants were given toxin-antitoxin, and later the Schick test showed that they had become immune. In the third group both the mothers and infants had become immune. Dr. Zingher said that in his experience he had never found any instance where the mother was susceptible and the young infant immune. From this study the following conclusions were warranted: (1) Many children are susceptible at birth or become so shortly afterward or during the first year of life. (2) Morbidity and mortality from diphtheria were highest from the first to the fifth year. (3) All children, both negative and positive reactors, under eighteen months of age should receive three immunizing doses (each 0.5 c.c.) one week apart. (4) Of the children over eighteen months of age and of youths and adults only those should be immunized with toxin-antitoxin who gave a positive Schick reaction. To these susceptible individuals three doses, each 1.0

c.c., were given, one week apart. They found that young children were very likely to take toxin-antitoxin mixture without showing a local or systemic reaction. The susceptibility to a foreign protein developed at a later period in life; none of the unpleasant reactions that occurred in older children and in adults manifested themselves in young children. The immunity festered by the toxin-antitoxin seemed to be fairly produced by the toxin-antitoxin might be used as a general prophylactic measure or it might be used to control outbreaks of diphtheria. By the application of the Schick test and diphtheria toxin-antitoxin, diphtheria had been practically stamped out in one institution in this city. In another institution the work was carried on during a period of over eighteen months and it was found that the children who were negative at the first test continued to give a negative reaction at subsequent tests. Those reacting positively were given toxin-antitoxin and a large percentage of these became immune. From observations made during an outbreak of diphtheria in one institution it was evident that toxin-antitoxin alone could not be depended upon where the outbreak was extensive and threatened to spread. The stamping out of this epidemic in spite of the presence of a large number of carriers afforded a very striking illustration of the control of the situation that the Schick test gave in the presence of an outbreak of diphtheria in an institution. The immunity developing from toxin-antitoxin was slow in appearing, and was therefore not a reliable safeguard in hospital wards where children were crowded together and suffering from various contagious diseases, but in institutions where diphtheria was more or less constantly present and clinical cases and bacillus carriers readily appeared, the combined application of the Schick test and active immunization had given most successful and encouraging results.

Dr. WILLIAM H. PARK stated that he and Dr. Zingher and those helping them had started several years ago with the mild hope that had now grown into an expectation and almost a belief that an entire population could be immunized to diphtheria. They had tried this in a number of institutions and had found that they could succeed in producing a lasting immunity in children who did not develop a natural immunity. Active immunization with toxin-antitoxin would start the process of immunization in a susceptible individual, and when the process had been started the individual would continue to make antitoxin and finally in some way a natural immunity took place. They had now refined the toxin-antitoxin so as to get rid of some of the protein substances derived from the bacillus, which caused in some individuals marked reaction. With injections of this refined preparation children would probably develop no deleterious reaction and, feeling sure on this point, we need have no hesitancy in urging general immunization against diphtheria. The Health Department Laboratory would furnish toxin-antitoxin and send a physician to make the injections when this was desired. They hoped to get a large group of infants and young children who had been actively immunized and to follow them from year to year, and they would be glad to have institutions co-operate with them in this work.

Dr. ALFRED F. HESS stated that the Schick reaction combined with the toxin-antitoxin injections had entirely changed the situation in regard to diphtheria in the institution with which he was connected. Previous to the introduction of this test they had diphtheria every year and always lost one or more children. About five years ago they began using the Schick test and thus dividing the susceptible children from those that were immune. In this way, by using the von Behring toxin-antitoxin method for immunizing all susceptible children, they had been able to control diphtheria in an institution having four hundred children. They had found that for one and one-half or two years 98 per cent. of the children had retained their immunity. They had found that it was not enough to test the children every year to know which were immune at one, two, or three years. They found that 15 per cent. became susceptible between the time of birth and the age of one year; 10 per cent. became susceptible during the second year; 5 per cent. during the third year, so that one must

watch very carefully during that entire period. They had had no case of diphtheria in any of these children in the last three years and thought this a very excellent result. As to the untoward results, there were three of four instances in which a reaction occurred after the administration of the immunizing dose of toxin-antitoxin, but in each instance the disagreeable symptoms were of short duration. He felt that in their institution they could not get along without the Schick test and toxin-antitoxin immunization.

Dr. ZINGHER, in closing, stated that they had given thousands of injections and had found that the younger the child the less likely it was to show a reaction to the toxin-antitoxin. In the thousands of injections he had given he had seen no instance of collapse or shock immediately following an injection. Even the history of the case reported by Dr. Hess indicated that the toxin-antitoxin might have had nothing to do with the temporary indisposition of the child. In one milk station the death of a child twenty-four hours after a Schick test was attributed by the family and the nurse to the Schick test. From their large experience with thousands of properly performed Schick tests they knew that such an occurrence was practically impossible. To emphasize the points brought out in this communication, Dr. Zingher again stated that the best way apparent at the present time for controlling and stamping out diphtheria from our communities was actively to immunize all children under eighteen months with toxin-antitoxin. The older children should be tested with the Schick reaction and only those immunized who gave a positive reaction and were susceptible to the disease.

A Psychological Study of Stealing in Juvenile Delinquency.—Dr. L. PIERCE CLARK presented this paper, in which he made no attempt to consider the so-called benign types of ordinary stealing, nor was emphasis placed on fanciful stealing, such as the kleptomaniacs. On the whole the main characteristics of the persons here considered were stealing money and consciously committing other antisocial acts of a petty sort, mainly as a consequence of having no well grounded sense of property rights. Usually these individuals showed predominantly many other poor adaptations to authority and law from earliest life, or they appeared unable to grasp thoroughly the importance of making the proper submission and compromise with parental discipline. There were some investigators who looked for the root of these trends entirely in the make-up of the youth himself, accounting him either a moron, a subinhibited mental defective, one antisocially inclined, or a psychopathic inferior, whatever that term might mean. Others greatly favored the idea that the parents or home environment were largely responsible for the development, if not for the actual implantation of the unruly or immoral traits of character. Usually neither group failed to indict the family stock for the delinquents found. When one undertook to investigate a series of such youths he was impressed by the fact that there were many more subtle forces at work than those usually obvious on the surface. Healy, in his investigations of mental conflicts and repressions in delinquent children, analyzed the acts of stealing money to sex delinquency and the incomplete mastery of the latter. In a long series of cases he found surprisingly often concealed sexual conflict as well as defect in parental discipline and lack of proper filial-parental relations. However, he mentioned no case in which antagonism to the father and desire for childish revenge upon this parent was the cause for stealing. Such a case was recently seen by the writer. This was a boy who for several years had stolen and played truant from school. The mother herself had become embittered because of her marital troubles and had gone to live with her mother. The boy stole so much from the grandmother and her immediate family that the mother had to take him elsewhere. The boy's great fault was in concealing his thoughts and daily activities from the grown people. After the more obvious faults in his home and school life were set right and the boy was permitted certain liberties and pleasures, his conduct improved, yet he still lied and was sly. A frank talk with this boy showed that he failed to make any good compromise with discipline and authority. Dr. Clark related sev-

eral similar instances and also cases in which the delinquency was more complicated and seemed in part due to inability to adjust properly to the revolt at puberty. In one case the cause seemed to lay in a latent homosexual complex. From a study of these cases the writer believed that one might fairly infer, when the act of stealing occurred without apparent motive, at least sufficient for the offense as ordinarily found, that it was probably unconsciously conditioned upon either a defect in adaptation to authority, to sexual conflict and repression at puberty, or it was a vicious homosexual theft substitution for the offender's own sex. The line of therapeutic procedure was obvious in all these cases, that was, explanation by analysis, conscious guidance, and a sympathetic aftercare and training. The enormous demand and difficulty of sublimation in the homosexual victim of the theft habit made correction extremely difficult. In fact it was to be doubted whether the homosexual was ever able to sublimate sufficiently to keep him from social conflicts or from a neurosis more or less dominant through his life. One could not too forcibly insist upon the importance of studying the child's adaptation to parental authority when delinquency began at a very early age as a basis for adjustment to all law and order in the future life of the individual. Sufficient data were at hand to warrant the statement that in the infant mind one of the earliest conceptions of reality was impingement of its desires by the parent. The magic signals of crying and gestures did not move the parent to gratify the child's wish. In the persistence of this feeling of unrequited longing no doubt the child began to scrutinize with increasing wonder the reason for noncompliance on the part of the parent, and more or less rapidly interpreted it in terms of selfishness or the self-satisfied possession of things and powers which enabled the person calmly to resist the child's frantic demands. Soon the parent's belongings were taken as symbols of the parent's potential self-sufficiency. It was not a far step to the further exercise of power for the child's satisfaction in gratifying his personal appetite in stealing fruits, or committing forbidden excesses which he believed the parent had unrestricted opportunities to enjoy. This seizing of the parental power and privilege advanced to new forms of covetousness and conquest, namely, that of possessing the magic symbol, money. In conclusion, it might be said that, even when the child's defective adaptation to authority and property rights were made clear, there were possibly other and still more genetic reasons for this early conflict, namely, the latent infantile desire to usurp the place of the father and all its possible prerogatives. While one need not neglect the study of the adult life of criminals, and especially the causes of recidivism, even there the adult pattern of the antisocial acts would probably be found to embrace in greater part the distorted mechanism of the primary life fault of early life. Dr. Clark, in closing, added his suggestions to those of Dr. Healy and Dr. Glueck to the end that the intensive study of antisocial behavior of the juvenile delinquent might enable us to correct not a few such faults before a fixed formation of habits and character had rendered the offender so hopeless in adult life.

Dr. BERNARD GLUECK referred to his work with the adult offender in a state prison, which had made him feel that the best results in regard to the study of the fundamental causes of misbehavior would be obtained outside of penal and correctional institutions, and certainly much earlier in the life of the individual than was possible in a state prison. There had to be established, first of all, a kind of relationship between the examiner and the prisoner, such as obtained between the patient and the physician, and this was still an ideal in most institutions. Those who were doing clinical work with the prisoner had fallen into the habit of assuming that in diagnosing the personality they had defined the problem of causation of the criminal act. This was true in some cases, but in the majority of instances the mere definition of the personality did not clear up very much the question of causation. It was in the patients who came to them spontaneously, because of some difficulty, and because they started out with the idea of establishing the proper kind of relationship with the examiner, that they obtained the most helpful clues as regards

causation, and not in the course of routine examination. Dr. Clark's paper threw exceedingly illuminating light on some of the origins of misbehavior. They had felt in a number of instances that it was just this revolt to parental authority in the youngster which remained unadjusted, that might lead to the transfer of the same feeling against authority in general, and to the easy development of a peculiarly paranoid outlook on life, which in its fully developed form might be called an anti-social grudge. In some instances this outlook on life assumed a more or less passive character while in others it assumed an active rôle, and the individual, aggressively antagonized the social order or customs. Occasionally a man left prison and frankly admitted that he had no intention of changing his former anti-social habits, actively resented any help or guidance toward rehabilitation, and seemed to derive considerable satisfaction from the coddling of his attitude toward society at large. There was also not much doubt concerning the relationship of disorders in the sexual life or instinct to misbehavior. The efforts at adjustment which certain individuals made when finding themselves confronted with a disturbing situation in their sexual life occasionally assumed an antisocial trend, and the crime might be looked upon as either a defense reaction or faulty method of adjustment. After relating such an instance coming under his observation Dr. Glueck expressed the opinion that studies like Dr. Clark's ought to be encouraged for he believed that an intensive psychoanalytic study of a few cases had the capacity of throwing far more light on the problem of causation of crime than the mere objective clinical study of even a very large number of inmates could ever hope to do.

Dr. HELEN MONTAGUE of the Psychopathic Clinic of the Children's Court stated that during the last fifteen months they had had 1100 children in the clinic of the Children's Court, of whom 474 were accused of stealing. This would go to show that stealing was one of the most common of the crimes that they were investigating. It had been their course to believe that there was something wrong with these offenders and one was inclined to think at first that they were feeble-minded. About 27 per cent. of this number were feeble-minded; about eight per cent. were psychopathic, and about 28 per cent. belonged to that class which had been designated as constitutionally inferior. This percentage of feeble-minded was rather low; it was generally estimated that among those who were in the habit of stealing about 30 per cent. were feeble-minded. However, the mental condition seemed to have very little to do with stealing. About 50 per cent. of those brought to the Court for stealing had a very poor environment. About 80 of those arrested for stealing were girls; the remainder were boys. The speaker cited in detail the history of several instances of stealing in which mental conflict was a factor. Often the boys first committed theft simply from a spirit of adventure, or to have a good time, and later on acquisitiveness entered in when they found that they could profit by the things they had stolen.

Dr. EDITH SPAULDING of the Laboratory of Social Hygiene expressed the opinion that Dr. Clark's paper was a valuable contribution to the study of larceny. It was through such intensive studies as these that progress was actually going to be made in the knowledge of antisocial acts. One part of Dr. Clark's paper that had particularly interested the speaker was the variety of types and causes which he brought out in his several cases. It was perhaps a tendency of the times to believe that delinquencies of various sorts could be reduced to a single simple formula by way of explanation and it was perhaps equally true that each reformer had a pet panacea which he advocated above all others in the reconstruction of individuals. There were doubtless many different causes of stealing, some of which Dr. Clark had so well described. The only one panacea which could be recommended was the analysis that had been used in his cases which permitted the fullest knowledge possible of each case and itself suggested the methods needed in the individual's reconstruction. Among the larceny cases among the psychopathic women at Bedford, there were some who had shown unusual resistance to sex temptation and others who had been

unable to adjust themselves to the sex requirements of married life or its equivalent. In these cases the relationship of the stealing to the sex maladjustment was not always clear in its origin. Many times, however, the stealing appeared to be due to childish standards of property which persisted in adult life, perhaps due to, or, at any rate, accompanied by a lack of development in other ways, one of which might be undeveloped or suppressed sex emotions. Both manifestations of immaturity might be the result of a series of maladjustments dating back to early childhood which had blocked development. Situations had not been met because of childish attitudes and fears or repressions. The way of least resistance had, therefore, always been chosen.

The sense of "mine" and "thine" was, it seemed, to a large extent an acquired characteristic of adult type, resulting from a realization of social rights and social standards. The appropriation of articles in the family during childhood was a very different matter, legally, when continued in the larger social family in adult years, no matter how similar the fundamental attitudes might be. After citing in detail a case which illustrated the association of stealing with sex maladjustment, the speaker said that in studying the origin of stealing, it seemed as though in many instances it might be the infantile expression of a primitive instinct of an acquisitive nature such as was found in animals as well as in primitive man. Such an instinct might suddenly appear with the same dominating power which the sex instinct manifested in maladjusted individuals. The appearance of this primitive acquisitive instinct as a habit might be likened to a malignant growth which represented tissue as harmless and as common in the embryo as was stealing in the child, but became an undesirable and even a destructive factor when it ran wild in the adult make-up.

Dr. ANNE T. BINGHAM related a recent discussion which she had heard on the subject of stealing by several prominent psychiatrists and criminologists. They all confessed to having stolen as children and stated that stealing was their first delinquency. This was suggestive and indicated the desirability of having a thorough study of this form of delinquency. Making a thorough study of this subject did not mean making a classification, and fitting the individual to that classification, but it meant a thorough study of the make-up of the individual. The New York Probation and Protective Association had been studying this problem in the girls with whom it came in contact. They had found that stealing was very frequently associated with sex delinquency. It was interesting to hear how these individuals rationalized their conduct to themselves though they did not always succeed in doing so to those who studied them.

Dr. CLARK, in closing, expressed the opinion that what was needed was the practical application in psychiatry of that principle which had added so much of value to the science of internal medicine, namely, that every case should be studied singly. Hitherto we had studied crime as an act, not from the standpoint of the individual criminal. The work that had been done at Sing Sing by Dr. Glueck and in Boston by Dr. Healy demonstrated that the problem offered by crime must be approached by the intensive study of the individual. As we all knew, stealing and lying were decidedly common traits in all families, and it had been suggested that they be put down in the family code. But when lying and stealing became a habit with the child, it was difficult for him to adjust himself to the codes of society in later life, and it was the failure to make this adjustment that led the delinquent to such disastrous results. It was not that these acts in themselves were essentially asocial in children; it was the continuance of them in later life that gave us the greatest concern, and just why these traits failed to be suppressed or transformed into healthful activities would be a great problem for future investigation. The study of the individual in his effort to meet these adjustments would be a great advance, Dr. Clark said, over the present archaic method of first making a classification and then endeavoring to fit the individual delinquent into a certain class, and would place criminology on a more scientific basis.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

CALIFORNIA STATE BOARD OF EXAMINERS.

Sacramento, October 22-23, 1918.

ANATOMY AND HISTOLOGY.

(Answer ten questions only.)

1. Discuss anatomy of the superficial lymph glands usually involved in the secondary phases of lues.
2. Describe briefly the gross structure of the pancreas and its topographical anatomy.
3. Discuss the structure and relations of the various tissues penetrated in making a lumbar puncture.
4. Describe fully the histology of the skin of the ala nasi and compare with that of the eyelid.
5. Discuss the attachments and action of the pectoralis minor.
6. Discuss briefly the contents of the axilla and their relations.
7. Describe briefly the portal circulation.
8. Describe the dorsalis pedis artery and its relations.
9. Name from without inward, the coverings of the testicle.
10. Describe the microscopic structure of the ovary.
11. Describe fully the frontal sinus.
12. Briefly describe the heart and its topographical anatomy.

PHYSIOLOGY.

(Answer ten questions only.)

1. Discuss the retina and its physiological properties.
2. Discuss the physiology of the blood leucocytes.
3. Describe general physiological conditions influencing blood pressure and blood velocity.
4. Discuss the contraction wave of the heart.
5. Discuss vaso-motor regulation and explain its importance in relation to function of organs, giving three examples.
6. What is intracranial pressure? Discuss the causes and effects of variations in this pressure.
7. Discuss the negative pressure prevailing in the thoracic cavity. Explain what influence it has on the organs in the mediastinal space.
8. Describe how the respiratory reflexes are protective, give examples and trace the reflex.
9. Discuss the events that occur during a single cardiac cycle beginning with the closure of the semilunar valves.
10. What relation should the quantity of vegetable food including starch and sugar bear to animal food consumed in 24 hours?
11. Describe myenteric reflex or the law of the intestines.
12. Describe the nervous mechanism of vomiting.

MATERIA MEDICA, THERAPEUTICS, PHARMACOLOGY AND PRESCRIPTION WRITING.

(Answer ten questions only.)

1. What is incompatibility in medicine and what are the different kinds of incompatibles? Give examples.
2. Outline the treatment of a typical case of "Spanish Influenza" in a young adult. Write prescriptions for all drugs used.
3. Discuss briefly the indications and contraindications for the use of digitalis in affections of the heart.
4. Describe pituitary extract and discuss briefly its uses and abuses.
5. Describe origin, physiological action, and give dose of salicylic acid.
6. Why is adrenalin used in solutions of novocaine for local anesthesia?
7. Give physiological effects, therapeutic application and mode of administration of oxygen.
8. Name drugs which administered to the mother produce a therapeutical action in the nursing child. What substances increase the flow of milk and what decrease it?
9. What is dichloramine-T? Describe its methods of application and its effect in infections.
10. Give treatment with prescription (written without abbreviation) for acute rheumatism.

11. Outline in detail the non-operative treatment of acute cholecystitis.
12. Discuss psycho-therapy, its relation to and its uses in the modern practice of medicine.

ANSWERS.

ANATOMY AND HISTOLOGY.

1. The inguinal glands are situated between the two layers of the superficial fascia and consist of two groups: (1) A horizontal group, roughly parallel with Poupart's ligament, and (2) a vertical group lying along the upper part of the internal saphenous vein. The superficial glands are about ten to twenty in number. Since syphilis is a *general* infection, and not a *local* disease, any lymphatics may be involved. The above, with the epitrochlear and the cervical, are among those most commonly involved.

2. The *pancreas* is long and irregularly prismatic in shape; it has been compared to a human or dog's tongue. The right extremity is called the head, which fits into the curve of the duodenum; the left end is called the tail and reaches to the spleen. The stomach lies in front of the body of the pancreas, and the transverse colon and its mesentery crosses the lower end of the head, which is also in relation to the superior mesenteric vessels. Behind the pancreas are the superior mesenteric artery and vein, portal vein, inferior vena cava, aorta, crura of diaphragm, left kidney with its suprarenal capsule. Below are the jejunum, the duodenojejunal junction, and the splenic flexure of the colon. Above the neck is the pyloric end of the stomach. The pancreas lies across the front of the first and second lumbar vertebrae, behind the stomach, and in the epigastric and left hypochondriac regions. Its canal is the duct of Wirsung, which extends transversely from left to right and opens into the duodenum in common with the ductus communis choledochus.

3. In making a *lumbar puncture* the following structures are penetrated (in order): Skin, fat and fascia, latissimus dorsi muscle, the posterior layer of lumbar fascia, the erector spinae mass of muscle, ligamentum subflavum, spinal dura, and arachnoid.

The *skin* consists of (1) epidermis and (2) dermis. The *epidermis* is made up of three principal layers: (a) The horny layer, or *Stratum corneum*, is the most superficial and consists of layers of flattened cells, which are dry and horny without any nucleus; (b) the *Stratum lucidum*, composed of several layers of nucleated cells, which are more or less indistinct, and in section appear as an almost homogeneous layer; (c) the *Rete mucosum*, or Malpighian layer, contains, in its upper part, layers of "prickle" cells, and its inferior layer consists of a single stratum of columnar cells. Pigment is principally found in the lowest layer.

The *dermis*, or true skin, is made up of an interlacing network of connective tissue, formed of white fibrous tissue, yellow elastic tissue, corpuscles, vessels, and nerves. In some parts of the body, as in the skin of the scrotum, perineum, penis, the cutis vera contains unstriated muscular fibers. There are also small muscular fibers in connection with the hair follicles. Beneath the skin the subcutaneous tissues contain abundant adipose tissue.—(From Ashby's *Notes on Physiology*.)

The *fascia* is an inelastic fibrous membrane, composed mainly of white fibrous connective tissue.

Voluntary muscle is composed of long, narrow fibers, with cross striations, surrounded by sarcolemma, and has many nuclei beneath the sarcolemma.

The *dura* consists of dense fibrous tissue containing connective tissue cells.

The *arachnoid* is composed of areolar tissue with few elastic fibers, and is covered by a layer of endothelium.

4. The skin of the *ala nasi* is of the structure given in question 3, but it is thicker than usual and is furnished with an unusual number of sebaceous follicles. It is firmly connected to the underlying structure.

The *skin of the eyelid* is loosely connected with the underlying muscle, it has no fat in its subcutaneous tissue, and the sebaceous glands are very small; the skin is thin.

5. The pectoralis minor has its *origin* in the upper border and outer surfaces of the third, fourth, and fifth

ribs, near the anterior extremity; also from the fascia which covers the external intercostal muscles in that region. It is inserted into the coracoid process of the scapula, where it is connected with the origin of the coraco-brachialis and the short head of the biceps. *Action:* It draws the scapula downward and forward and depresses the point of the shoulder; acting from the insertion, it elevates the third, fourth, and fifth ribs (as in forced inspiration).

6. Contents of the axilla and their relations: "It contains the axillary vessels, and the brachial plexus of nerves, with their branches, some branches of the intercostal nerves, and a large number of lymph nodes, all connected by a quantity of fat and loose areolar tissue. The axillary artery and vein, with the brachial plexus of nerves, extend obliquely along the outer boundary of the axilla, from its apex to its base, and are placed much nearer the anterior than the posterior wall, the vein lying to the inner or thoracic side of the artery and partially concealing it. At the fore part of the axilla, in contact with the pectoral muscles, and along the anterior margin are the thoracic branches of the axillary artery, and along the lower margin of the pectoralis minor the long thoracic artery extends to the side of the thorax. At the back part, in contact with the lower margin of the subscapularis muscle, are the subscapular vessels and nerves; winding around the outer border of this muscle is the dorsalis scapulae artery and veins; and, close to the neck of the humerus, the posterior circumflex vessels and the circumflex nerve are seen curving backward to the shoulder. Along the inner or thoracic side no vessel of any importance exists, the upper part of the space being crossed merely by a few small branches from the superior thoracic artery. There are some important nerves, however, in this situation, viz., the long thoracic or external respiratory nerve, descending on the surface of the serratus magnus, to which it is distributed; and perforating the upper and anterior part of this wall, the intercostohumeral nerve or nerves, passing across the axilla to the inner side of the arm."—(Gray's *Anatomy*.)

7. *Portal circulation:* The hepatic artery and the portal vein convey blood to the liver. The artery carries arterial blood, and the vein food-laden venous blood from the walls of the alimentary canal, and from the spleen and pancreas. Both vessels enter the liver at the transverse fissure, and they ramify in its interior, breaking up into small terminal branches which run between the lobules and send fine capillary branches into their substance; from these latter branches the blood passes into the capillary tributaries of the intra-lobular veins, thence to the sublobular veins, and from the sublobular veins to the hepatic veins which terminate on the posterior surface of the liver in the inferior vena cava.

8. The *dorsalis pedis artery* is the continuation of the anterior tibial artery, and extends along the dorsum of the foot, from the anterior ligament of the ankle joint, midway between the two malleoli, as far as the first intermetatarsal space, where it divides into the dorsalis hallucis and the plantar or perforating. *Relations.*—*Superficial:* Skin, fascia, anterior annular ligament, and innermost tendon of extensor brevis digitorum. *Deep:* Astragalus, navicular, middle cuneiform, and their ligaments. *External:* Vena comes, anterior tibial nerve, extensor longus digitorum. *Internal:* Vena comes, extensor proprius hallucis.

9. *Coverings of the testicle, from without inward:* Scrotum (skin and dartos), intercolumnar fascia, cremasteric fascia, infundibuliform fascia, tunica vaginalis.

10. The *ovary* consists of a covering of *germinal epithelium*, a *stroma* and the *Graafian follicles*. The *germinal epithelium* is a layer of tall columnar cells on the surface. The *stroma* is a fibroelastic structure with many spindle-shaped cells and *interstitial cells*. Some of the latter are derived from the germinal epithelium, some are cells of luteal tissue. Near its attachment to the broad ligament there are numerous plain muscle fibers. The *Graafian follicles* are scattered throughout the stroma. They are small towards the surface, large towards the interior, but the ripest enlarge to such an extent as to reach the surface again. Each follicle is enclosed in an outer tunic of fibrous

tissue of the stroma and an inner more cellular tunic.—(*Aids to Histology*.)

11. The *frontal sinuses* are two irregular shaped air cavities, situated between the two lamellae of the vertical part of the frontal bone. They are separated by a thin septum; and each sinus has trabeculae of bone. They are not present at birth, and occasionally do not develop at all. The right sinus is generally the larger. The floor is thin, and is over the orbit and upper part of the ethmoid. The sinuses are lined with mucous membrane, and communicate with the middle meatus of the nose by a duct called the infundibulum.

12. The *heart* is located obliquely in the thorax, between the lungs, and enclosed in the pericardium. A line from the lower border of the second left costal cartilage (one inch from sternum) to upper border of third right costal cartilage (half inch from sternum) represents the *base line*; the *right side* will be a line drawn from right side of upper limit to seventh right chondrosternal articulation; the *lower limit* is a line from this last point to the apex (in fifth left intercostal space three and one-half inches from mid-line); the *left side* from left end of upper border to left of apex. The heart lies opposite the fifth, sixth, seventh, and eighth dorsal vertebrae.

Its walls consist of muscle fibers, with some connective tissue to which many of the fibers are attached. The heart is divided by a septum into a left and right heart; and each side is further divided into an upper chamber (auricle) and a lower chamber (ventricle), connected with valves so arranged that circulation of the blood only occurs in one direction. In the *right auricle* are the Eustachian and coronary valves; the former is situated between the anterior margin of the inferior vena cava and the auriculo-ventricular orifice. In the right auricle are also found the openings of the superior and inferior venae cavae, coronary sinus, foramina of Thebesius, the auriculo-ventricular opening, the fossa ovalis, annulus ovalis, tubercle of Lower, and the muscoli pectinati. In the *right ventricle* are the tricuspid and semilunar valves; also the columnae carneae, chordae tendineae, and the auriculo-ventricular opening and the opening of the pulmonary artery. In the *left ventricle* are the mitral and semilunar valves, the columnae, chordae tendineae, and the aortic and auriculo-ventricular opening. The heart is about $5 \times 2\frac{1}{2} \times 3\frac{1}{2}$ inches, and weighs about ten ounces. It is supplied with blood by the right and left coronary arteries. The nerve supply is from the superficial and deep cardiac plexuses, and from the vagus and sympathetic system.

PHYSIOLOGY.

1. The *retina* is composed of several layers, from without inwards, as follows: (1) Layer of pigment cells; (2) layer of rods and cones; (3) the external limiting membrane; (4) the outer nuclear, or granular, layer; (5) the outer molecular, or reticular, layer; (6) the inner nuclear, or granular, layer; (7) the inner molecular, or reticular, layer; (8) the layer of ganglion cells; (9) the layer of nerve fibers; and (10) the internal limiting membrane. These structures are bound together by sustentacular fibers or neuroglia. The portion concerned in most acute vision is the macula lutea, and especially its central portion, the fovea. The *blind spot* is that part of the retina at which the optic nerve enters; it is occupied entirely by fibers of the optic nerve, and is devoid of any elements of the retina; it is insensitive to light. When the retina is suitably stimulated by light, there are produced sensations of light, of color, and of form.

"Of all the layers of the retina, the rods and cones appear to be the most essential to vision. It is only this layer that is capable of receiving the light stimulus and of transforming it into some specific form of energy, which in turn arouses in the fibers of the optic nerve the characteristic nerve impulses. A ray of light entering the eye passes entirely through the various layers of the retina, and is arrested only upon reaching the pigmentary epithelium in which the rods and cones are embedded. As to the manner in which the objective stimuli—light and color, so called—are transformed into nerve impulses, but little is known. It is probable that the ether vibrations are transformed into heat, which excites the rods and cones. These, acting

as highly specialized end-organs of the optic nerve, start the impulses on their way to the brain, where the seeing process takes place. As to the relative function of the rods and cones, it has been suggested, from the study of the facts of comparative anatomy, that the rods are impressed only by differences in the intensity of light, while the cones, in addition, are impressed by qualitative differences in color. The nerve-fibers themselves are insensible to the impact of the ether vibrations, and require for their excitation some intermediate form of energy."—(Brubaker's *Physiology*.)

2. The white blood cells are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, or neutrophils, and (3) eosinophils. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their functions are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

3. *Blood pressure* is the pressure of the blood due to the ventricular systole, the elasticity of the arterial walls, and the resistance of the capillaries. The normal arterial blood pressure varies; the systolic pressure being (in males) about 120 to 150 mm. of mercury, and the diastolic from about 90 to 120 mm. of mercury. In females, the pressure is from 10 to 15 mm. lower. Blood pressure is maintained by the contraction of the heart, the peripheral resistance, and the elasticity of the arterial walls.

Blood pressure is estimated by a sphygmomanometer. Arterial pressure is produced and maintained by: The force and contraction of the left ventricle; the volume of blood pumped by the heart into the already full arteries; the action of the aortic semilunar valves in preventing regurgitation of the blood into the left ventricle when it goes into diastole; the elastic resiliency of the middle coats of the large arteries; the peripheral resistance exerted by the muscular wall of the arterioles, which are especially controlled by the vasomotor nerves; the increased surface over which the blood flows through the capillaries; and the tension of the extravascular tissues. The capillary pressure depends upon the condition of the arterioles. If the arterioles to a part dilate, the capillary pressure rises; if they constrict the capillary pressure falls. If, however, the venous pressure is raised, the capillary pressure must consequently rise too. Gravity very materially influences the capillary pressure. The venous pressure is influenced by: The presence of valves, which prevent a backward flow; and respiratory movements.—(From Lyle's *Physiology*.)

The velocity of the blood flow is largely influenced by the same factors as the blood pressure, particularly the force of the ventricular systole and the peripheral resistance. The possibilities of the variations in these factors are shown in the following table from Waller, in which the plus sign denotes an increase and the minus sign a decrease in effect:

HEART.	ARTERIOLES.	BLOOD-PRESSURE.	BLOOD-FLOW.
Force constant..	Resistance increased	+	—
Force constant..	Resistance diminished	—	+
Force increased..	Resistance constant	+	+
Force diminished	Resistance constant	—	—
Force increased..	Resistance diminished	+	++
Force diminished	Resistance increased	—	—
Force increased..	Resistance increased	+	++
Force diminished	Resistance diminished	—	—

4. *Contraction wave of the heart.*—"It seems to be demonstrated that normally the contraction of the heart begins in the sinus tissue of the right auricle, the so-called sino-auricular node or in the neighboring sinus tissue. The tissue of the sino-auricular node is designated sometimes as the pace-maker of the heart, on

the assumption that its rhythm sets the pace for the rate of the beat of the whole heart. . . . In the mammalian heart, when exposed to view, it is evident that the auricular systole is not sufficient to empty its cavity, so far at least as the atrium is concerned. The contraction of the auricular appendages is more forcible. The contraction may be regarded as a rapid peristalsis, which sweeps a portion of the blood before it into the ventricle. . . . The systole of the ventricle is to the eye a simultaneous contraction of the whole musculature. Various observers, however, have shown that the wave of contraction travels over the heart with a certain velocity, which for the human heart has been estimated at 5 m. per second. It is probable that this wave starts at the base of the ventricle and travels along the course of the fibers—that is, first toward the apex and then into the interior of the heart. In regard to this point there have been great differences of opinion among different investigators. . . . Between the auricular and the ventricular contractions there is a perceptible interval which for the human heart can be estimated from a study of the records of the jugular pulse. The interval between the *a* and the *c* waves, the *a-c* interval as it is called, marks the time intervening between the contraction of the auricles and of the ventricles. This interval may be valued at 0.2 sec. or less, and is due chiefly to the time necessary for the excitation wave to pass over the conducting system between the auricles and ventricles. In all probability the conduction in this system is slower than in the musculature of the auricles or ventricles."—(Howell's *Physiology*.)

5. *Vasomotor regulation.*—"There are two antagonistic sets of nerve fibers: First, the vasoconstriction fibers, whose action causes a contraction of the muscular coats of the arteries, and therefore a diminution in the size of the vessels; second, the vasodilator nerve fibers, whose action causes an increase in size of the blood-vessels, due probably to a relaxation (inhibition) of the muscular coats of the arteries. . . . The main facts regarding the vasomotor apparatus may be summarized as follows:

Efferent vasomotor nerve fibers.

- I. Vasoconstrictor fibers—distributed mainly to the skin and the abdominal viscera (splanchnic area), all connected with a general center in the medulla oblongata, and in constant tonic activity.
- II. Vasodilator fibers—distributed especially to the erectile tissue, glands, bucco-facial region, and muscles; not connected with a general center and not in tonic activity.

I. Premor fibers. Cause vascular constriction and rise of arterial pressure from reflex stimulation of the vasoconstrictor center, e.g. sensory nerves of skin.

II. Depressor fibers. Cause vascular dilatation and fall of arterial pressure from reflex inhibition of the tonic activity of the vasoconstrictor center, e.g. depressor nerve of heart.

III. Depressor (or reflex vasodilator) fibers. Cause vascular dilatation and fall of arterial pressure from stimulation of the vasodilator center, e.g. erectile tissue, congestion of glands in functional activity.

It may be supposed that under normal conditions the activity of this mechanism is adjusted so as to control the blood-flow through the different organs in propor-

tion to their needs. When the blood-vessels of a given organ are constricted the flow through that organ is diminished, while that through the rest of the body is increased to a greater or less extent corresponding to the size of the area involved in the constriction. When the blood-vessels of a given organ are dilated the blood-flow through that organ is increased and that through the rest of the body diminished more or less. The adaptability of the vascular system is wonderfully complete, and is worked out mainly through the reflex activity of the nervous system exerted partly through the vasomotor fibers and partly through the regulatory nerves of the heart." (Howell's *Physiology*.)

6. *Intracranial pressure*.—"By intracranial pressure is meant the pressure in the space between the skull and the brain,—therefore the pressure in the subarachnoidal liquid and presumably also the pressure in the ventricles of the brain, since the two spaces are in communication. This pressure may be measured by boring a hole through the skull, dividing the dura, and connecting the underlying space with a manometer. Observers who have measured this pressure state that it is always the same as the venous pressure within the sinuses. This we can understand when we remember the close relations between the subarachnoidal liquid and the large veins and sinuses. We may consider that the large veins are surrounded by the cerebrospinal liquid, and consequently an equilibrium of pressure must be established between them; any rise in the intracranial pressure raises venous pressure by compression of the veins. This statement holds true at least so far as the intracranial pressure is due to the circulation. The intracranial pressure is caused and controlled normally by the pressure within the arteries and capillaries. This pressure, by enlarging these vessels, tends to expand the brain against the skull, and exercises a pressure, therefore, upon the intervening cerebrospinal liquid. This pressure, however, cannot exceed that in the veins, since, as said, an excess will be equalized by a corresponding compression of the veins. The venous pressure in the end determines, therefore, the actual amount of intracranial pressure. Conditions which alter the pressure in the cerebral veins affect the intracranial pressure correspondingly. Thus, compression of the veins of the neck raises the pressure in the cerebral veins and also intracranial pressure, and a higher general arterial pressure also results finally in a higher pressure in the cerebral veins and therefore in the subarachnoidal space. Under pathological conditions, such as tumors, abscesses, excessive formation of cerebrospinal liquid, etc., which lead to a general compression of the brain, intracranial pressure may be increased beyond normal limits. Experimental investigations show that so long as the intracranial pressure remains below that of the arteries supplying the brain the circulation through the brain is not markedly affected. If, however, the intracranial pressure rises above general arterial pressure the flow through the substance of the brain is prevented and a condition of anemia results which would presumably cause unconsciousness. In anesthetized animals submitted to such a condition it has been shown that a compensation takes place; the anemic condition of the medulla stimulates the cardio-inhibitory center, causing a slower heart-beat; at the same time it stimulates also the vasomotor center, causing a general vasoconstriction in the rest of the body, the result of which is to raise the arterial pressure and reestablish the cranial circulation (Cushing)." (Howell's *Physiology*.)

7. *Intrathoracic pressure* is "the pressure in the pleural cavity and mediastinal spaces. This pressure, under normal conditions, is always negative,—that is, is always less than one atmosphere. The reason for this is simply that the lungs are distended to fill the thoracic cavity, and consequently the organs, like the heart, which lie in this cavity outside the lungs, are exposed to a pressure of one atmosphere, minus the force of elastic recoil of the lungs. The heart and other intrathoracic organs are protected from the direct pressure of the air by the thoracic walls; they are pressed upon, however, through the lungs, but naturally the atmospheric pressure is reduced by an amount equal to the elastic force of the distended lungs. Intrathoracic pressure, in fact, may be defined as intrapul-

monic pressure minus the elastic pull of the lungs, and since under usual conditions the intrapulmonic pressure is equal to that of the atmosphere, the intrathoracic pressure is less than an atmosphere by an amount equal to the recoil of the lungs. The negative pressure in the thorax is, therefore, equal to the elastic force of the lungs, and is larger the more the lungs are put upon the stretch,—that is, the deeper the inspiration." (Howell's *Physiology*.)

8. *Respiratory reflexes*.—"The mucous membrane of the larynx receives its sensory fibers from the superior laryngeal nerve. When this nerve is stimulated artificially the respirations are always inhibited; the chest comes to rest in the position of passive expiration. The same effect may be obtained from the sensory fibers of the glossopharyngeal supplying the pharynx, and indeed a temporary inhibition of respirations occurs through this nerve during every act of swallowing. The sensory fibers of the nasal mucous membrane (trigeminal) cause a similar reflex inhibition when stimulated by injurious or so-called irrespirable gases, such as HCl, Cl, NH₃, SO₂, etc. We may regard this inhibitory influence exerted by the sensory fibers distributed along the air passages as a protective reflex which guards the lungs automatically from injurious gases. This protective action is made more evident by the fact that, together with the cessation of respirations, the glottis is reflexly closed by contraction of the adductor muscles and, if the stimulation is strong, even the bronchial musculature may be contracted, so that in every way the passage to the alveoli is made more difficult. The reflex is, of course, more or less temporary, but it possesses the great advantage of being automatic, and may enable the animal or individual to escape unharmed from a dangerous locality before the increasing irritability of the respiratory center breaks through the inhibition. . . . We know also that irritating gases or foreign bodies of any sort that enter the larynx may lead to a coughing reflex,—that is, to a series of expiratory blasts which have a purposeful end in the expulsion of the stimulating object. In this case there is not simply an inhibition of the inspiratory movements, but a reflex excitation of a peculiar type of expiratory movements." (Howell's *Physiology*.)

9. *Cardiac cycle*.—"We may begin with the closure of the semilunar valves. At that moment the second heart sound is heard and at that moment the ventricle is quickly relaxing from its previous contraction. Since the auriculoventricular valves are still closed, the ventricles for a brief interval are shut off on both sides. The blood is flowing steadily into the auricles and dilating them. As soon as the ventricles relax, the pressure of blood in the auricles opens the auriculoventricular valves, and from that moment until the beginning of the auricular systole the blood from the large veins is filling both ventricles and auricles. The venous blood which has been accumulating in the auricles during the ventricular systole flows into the ventricles with some suddenness on the opening of the auriculoventricular valves. The ventricles, therefore, dilate rapidly and the auriculoventricular valves are floated into a position ready for closure. . . . The auricular systole sends a sudden wave of blood into the ventricles, dilating them still further and momentarily blocking or retarding the flow from the large veins. The ventricular systole follows at once upon the auricular systole. As the ventricle enters into contraction the auriculoventricular valves are tightly closed, the first sound is heard, and for a short interval the ventricular cavity is again shut off on both sides. Soon the rising pressure in the interior forces open the semilunar valves, and then a column of blood is discharged into the aorta and pulmonary artery as long as the contraction lasts. During this interval the flow at the venous end of the heart continues, the blood being received into the yielding auricles. . . . At the end of the ventricular systole the excess of pressure in the aorta and the pulmonary artery closes the semilunar valves and completes the cycle." (Howell's *Physiology*.)

10. One part of raw animal food to three parts of raw vegetable foods is about the proper proportion.

11. *Myenteric reflex, or law of the intestine*.—"The peristaltic movement consists in a constriction of the

walls of the intestine, which, beginning at a certain point, passes downward away from the stomach, from segment to segment, while the parts behind the advancing zone of constriction gradually relax. The wave of constriction may be recorded by the use of suitable apparatus. When thus recorded it is found that the advancing area of constriction is preceded by an area of inhibition or relaxation, so that the peristaltic movement consists of two parts, following in a definite sequence, which seem to combine to facilitate the movement onward of the intestinal contents; for it is obvious that the wave of constriction will be more effective in forcing the contents forward if just in front of it the intestine is relaxed by inhibition of the tonicity of the muscular coat. Bayliss and Starling, to whom we owe the discovery of this two-fold character of the movement, regard it as a reflex which is controlled within the intestinal wall itself through its intrinsic ganglia and their afferent and efferent connections. When a bolus is inserted into the intestine at any point its effect upon the sensory fibers is such as to cause a reflex contraction of the muscle above the bolus, that is, toward the stomach, and a reflex inhibition or dilatation below. They speak of this definite relationship as the *law of the intestine*; it is described also under the name *myenteric reflex*. It is obvious that the circular layer of muscles is chiefly involved in peristalsis, since constriction can only be produced by contraction of this layer. To what extent the longitudinal muscles enter into the movement is not definitely determined." (Howell's *Physiology*.)

12. *Nervous mechanism of vomiting*.—Normally, vomiting is a reflex act. "The afferent nerves are principally the fifth, and glossopharyngeal (as in vomiting produced by tickling the fauces), and the vagus (as in vomiting produced by gastric irritants); but vomiting may occur from stimulation of other sensory nerves, e.g. those from the kidney, uterus, testicle, etc. The medullary centers may also be stimulated by impressions from the cerebrum and cerebellum, producing so-called central vomiting occurring in diseases of those parts. The efferent (motor) impulses are carried by the vagi to the stomach, by the phrenics to the diaphragm, and by various other spinal nerves to the abdominal muscles. It is very doubtful whether there is any separate center for vomiting; the center for the reflex coincides with those of the nerves mentioned in the medulla oblongata. *Emetics*.—Some emetics produce vomiting by irritating the stomach; others, such as tartar emetic, apomorphine, etc., by stimulating the medullary centers." (Halliburton's *Physiology*.)

MATERIA MEDICA, THERAPEUTICS, PHARMACOLOGY, AND PRESCRIPTION WRITING.

1. By *incompatibility* is understood the simultaneous administration or combination of substances not suitable for such combination. *Therapeutic incompatibility* occurs when two agents are administered together which have antagonistic physiological actions, such as morphine and atropine; this is often intentional. *Chemical incompatibility* occurs when remedies which are mixed together undergo chemical decomposition or explosion. *Pharmaceutic incompatibility* is seen in compounding a resinous tincture with an aqueous solution.

2. *Treatment of Spanish Influenza*.—The patient should be ordered to remain in bed, and be kept warm; he should be isolated as much as possible. Some stimulant such as aromatic spirit of ammonia may be given in 30 minim doses in water every 3 or 4 hours. The following prescription will prove useful:

R Extracti aconiti.....gr. ijss
Acetphenetidini.....3j
Quinina sulphatis.....gr. xxiv
Pulveris Doveri.....gr. xij

Misce et. in caps., No. xxiv.

Signa: Take two every three hours.

The patient should have plenty of water to drink, and liquid food; fresh air is necessary. A tonic will be required when convalescence sets in.

3. Digitalis is indicated in diseases of the heart: (1) when heart action is rapid and feeble, with low arterial tension; (2) in mitral lesions when compensation has

begun to fail; (3) in nonvalvular cardiac affections; (4) in irritable heart, due to nerve exhaustion. Digitalis is contraindicated in diseases of the heart: (1) in aortic lesions when uncombined with mitral lesions; (2) when the heart action is strong, and arterial tension high. Digitalis is also a diuretic, and it is also used in some forms of nephritis, exophthalmic goiter, pneumonia, chronic bronchitis, etc.

4. *Pituitary extract*, containing the principle found in the posterior lobe which acts on unstriated muscle, is now an ordinary article of commerce for many therapeutic purposes. It is a favorite remedy for surgical and toxic shock, and many observers are convinced that it does good by raising the blood-pressure. A very valuable effect is that it promotes peristalsis even when purgatives fail or are vomited, as in cases of intestinal paralysis after abdominal operations. A third indication is to increase labor pains; sometimes in cases of weak pains the child is expelled very rapidly after an injection. It is a powerful diuretic. As a galactagogue its success so far has been doubtful. Feeding with the gland may be valuable in some forms of amenorrhea. Pituitary extract must not be given frequently at short intervals, or its effect may be reversed."—(Short's *Newer Physiology*.)

In obstetrics, pituitrin should not be given until the cervix is dilated or dilatable, and it should be remembered that sometimes the contractions produced by it are so energetic as to endanger asphyxiation of the child and rupture of the uterus.

5. *SALICYLIC ACID*. *Origin*.—It is derived from oil of wintergreen; also made synthetically by combination of sodium carbonate and carbon dioxide; this is then treated with hydrochloric acid. *Physiological action*.—"Antiseptic; irritant; strongly cholagogue; antipruritic, diaphoretic; diuretic (markedly increasing the excretion of uric acid). In exceptional instances skin eruptions are caused, and in some individuals a train of symptoms analogous to those of cinchonism, and designated as *salicylism*, results from the use of salicylic preparations." *Dose*.—Twelve grains.

6. *Adrenalin is used in solutions of novocaine for local anesthesia*: (1) To prolong the anesthesia; this is accomplished by the vasoconstrictor action of the adrenalin on the local vessels, and this prevents the rapid removal of the anesthetic by the blood stream. (2) To prevent local hemorrhage; this is also accomplished by the vasoconstrictor action of the adrenalin.

7. *OXYGEN*. *Physiological effects*: "The inhalation of oxygen causes a sensation of warmth in the respiratory passages and increases the appetite and the mental and bodily vigor. The red blood corpuscles are increased in number and stimulated to greater activity. *Therapeutic uses*: Cardiac disease, pneumonia, pulmonary edema, emphysema, convulsions, chloroform narcosis, asphyxia from toxic gases, and in various other conditions characterized by great lividity or by dyspnea due to causes interfering with the oxygenation of the blood; also in chronic conditions such as anemia, albuminuria, glycosuria, and phthisis." *Mode of administration*.—The oxygen is under compression, and is contained in steel cylinders. It is passed through water in a bottle and conveyed through a rubber tube terminating in a funnel which is held in front of the patient.

8. *Drugs which are excreted in the milk*.—Rhubarb, senna, scammony, castor oil, opium, arsenic, iron, lead, mercury, salts, and potassium iodide.

Substances which increase the flow of milk.—Tonics, good food, pilocarpus, and leaves of the castor oil plant applied locally.

Substances which decrease the secretion of milk.—Belladonna, antipyrine, potassium iodide, colchicum with magnesium sulphate, compression of the breasts, camphor applied locally, and bandaging the breasts with adhesive plaster or belladonna plaster.

9. *Dichloramine-T* is a new chlorine compound containing twice as much chlorine as chloramine-T, and having a more powerful germicidal action. It is generally used in a five per cent. solution, and is applied by means of an oil spray. The solution should be freshly prepared, and applied to the wound once a day. The wound is cleansed and dried, and all devitalized tissues are to be removed, bleeding vessels must be ligated, and the wound surfaces then sprayed with the

solution. Drainage may be necessary; and antiseptic dressings are applied. It acts as a disinfectant; and under its influence wounds heal rapidly. No Carrel tubes are needed; the wound has only to be dressed once a day, and so the patient is saved pain and discomfort; there is also a saving of time for doctors and nurses, and also a saving of material used in dressing the wound.

10. *Treatment of acute rheumatism.*—"The patient must be kept absolutely at rest in bed. He should lie between blankets, not sheets, and should wear a flannel night-gown. The diet should consist of milk, diluted with mineral water; if it does not agree, chicken broth may be given. In convalescence it may be more ample, but red meat should be sparingly used. Salicylate of soda, or salicin, is the specific remedy, the latter being the less depressant form. In severe cases, the salicylate should be given in doses of gr. xx every two hours until the pain is relieved, thereafter every four hours till the temperature falls, and then less frequently and in smaller doses, its withdrawal being gradually accomplished. In less severe attacks gr. xx every four hours may suffice. Should the salicylate disagree, other salicyl compounds (oil of wintergreen, aspirin) may be used. In the view of the majority, the salicylates shorten the course, protect the heart, and lessen the liability to relapse; but some still prefer the alkaline treatment, in which case large doses (5iiss) of sodium bicarbonate are given every three hours. The amount is lessened when the urine becomes alkaline. If the pain in the joints is severe, they should be fomented, and the limb should be put upon a splint. A lotion of carbonate of soda and laudanum, or a liniment of methyl salicylate may give relief; and morphine is sometimes required at first. Hyperpyrexia should be treated by the cold bath."—(Wheeler and Jack's *Handbook*.)

For acute rheumatism:

R Sodii salicylatis.....5iv
Pctassii bicarbonatis.....5iv
Aque menthæ piperitæ, q. s., ad.....5iv

Misce et signa: One dessertspoonful, in water, after each meal.

11. *Non-operative treatment of acute cholecystitis:* The line of treatment to be adopted depends entirely on the cause of the catarrhal inflammation. If it arises from cold and exposure and is seen early a warm bath or a vapor bath, and the use of saline cathartics, or of small doses of tartar emetic, are of service. Full doses of quinine and Dover's powder at bedtime, with a light purge in the morning, will often relieve the general symptoms of "cold," and exert a favorable influence upon the local catarrh. If the cause of the disease is a coexisting gastroduodenal catarrh, a mechanical emetic, repeated twice on each of the first two days, is often of service. Large draughts of hot water, either at bedtime or repeated throughout the day, are grateful and beneficial. They are made more palatable by the addition of some one of the alkaline citrates. At the same time an alkaline purgative, largely diluted, should be employed, and then gastric sedatives or the mineral acids. . . . A mercurial purgative is first administered; from one-twelfth to one-third of a grain of calomel, in combination with from three to ten grains of bicarbonate of soda every two hours, until eight or twelve powders are taken. If the bowels are not acted on freely by this combination, it should be followed by a saline laxative. At the same time light sinapisms are applied to the epigastrium. . . . Alkaline effervescing waters, as the Carlsbad, Vichy, or Hathorn waters, or the salts of ammonium, sodium, or potassium may be used. Bartholow advocates the phosphate of sodium in drachm doses. The muriate of ammonium is one of the most reliable alkalies; it may be given in ten or twenty grain doses, three or four times daily, combined with an equal quantity of powdered licorice, and dissolved in water. Ipecacuanha has been advocated in small doses, as one-half of a grain or one grain, frequently repeated, for the same purpose. To increase the secretion, nitrohydrochloric acid, the vegetable hepatic stimulants, benzoate and salicylate of soda, and alkaline waters are of service. The alkalies should be taken in a large amount of water, preferably hot, on an empty stomach, and by slowly sipping the fluid.

Emetics are also used for their mechanical effect, but care must be observed lest their too free use incite a fresh catarrh or aggravate the one already existing.—(From *Reference Handbook*.)

12. *Psychotherapy:* "For ordinary therapeutic purposes, the physician may be content to know only the physical signs and symptoms of his patient's affection. For psychotherapeutics, he must, if he would be successful, know every possible source of worry and annoyance and, as nearly as may be ascertained, every slight phase of physical fatigue that may be a disturbing factor in his patient's life. It is surprising how many things the physician will find to correct when he carefully goes over all the actions of the day and ascertains all the possible sources of worry and anxiety his patient may have. It may happen that in many cases he will be unable immediately to remove these sources of worry. But there is relief in telling them, and then, even when they cannot be completely eradicated, they can often be modified. Every improvement of this kind, however slight, is a fountain of favorable suggestion which makes the patient look on the brighter side of life. From every amelioration, however trivial, there is a reaction on the feelings that gives more and more confidence. . . . Psychotherapy represents one of the important elements in therapeutics, and we must learn to use it in a way suitable to our patients. We have to learn to use our drugs in accordance with the nature and physical make-up of the patient. We have to find out by experience just how to use hydrotherapy for each individual. Varying currents of electricity and varying forms of electrical action are needed for different individuals. Just in the same way, our psychotherapy must be dosed out according to the special need of each individual, the form of the affection and the particular kind of mind that is to be dealt with. To learn the place of mental influence in healing, so that we shall not be attributing to other therapeutic factors what is really due to the mind, will be a great advance in therapeutics. In brief, the applications of the general principles of psychotherapy include all means, apart from the physical, of influencing patients. Drugs will always have a large place in rational therapy. Many physical remedial measures, hydrotherapy, electrotherapy, climatotherapy and others, must be important adjuncts. To these is now added psychotherapy. It has been used before, as have most of the other forms of therapy, but in our day we are trying to systematize therapeutic modes so as to secure the greatest possible information with regard to their exact application. This is what must be done with regard to psychotherapy also. Just now its importance is being exaggerated by ardent enthusiasts. The business of the practicing physician must be to select what is best, and above all what is sure and harmless, from the many suggestions offered, so as to build up a practical body of applied truth."—(Walsh's *Psychotherapy*.)

(To be continued.)

Books Received.

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INTRAVENOUS INJECTION IN WOUND SHOCK. By W. M. BAYLISS, M.A., D.Sc., F.R.S. 163 pages. Illustrated. Price, \$3.00 net. Published by Longmans Green & Company, New York.

INDIGENOUS DRUGS OF INDIA. By J. C. GHOSH, B.Sc. 32 pages. Price, 12 annas, or one shilling. Published by Butterworth Co., Ltd., Calcutta, India.

DIABETES AND ITS DIETETIC TREATMENT. By B. D. BASU. 104 pages. Price, Re. 1-8. Published by The Panini Office, Bhuvaneshvari Ashram, Bahadurganj, Allahabad, India.

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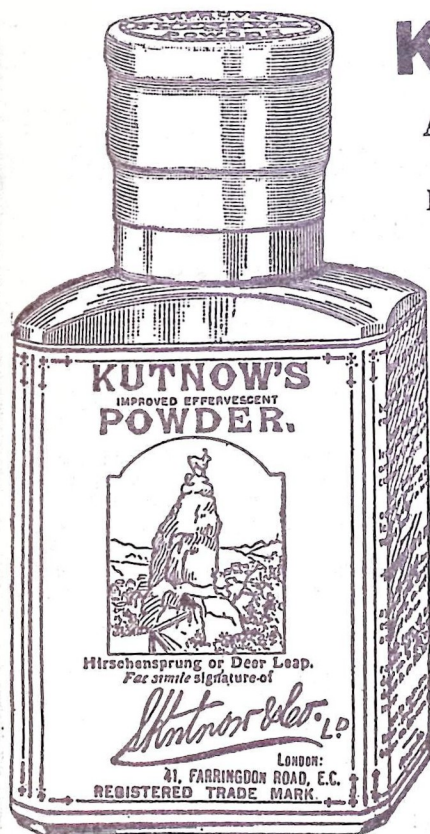
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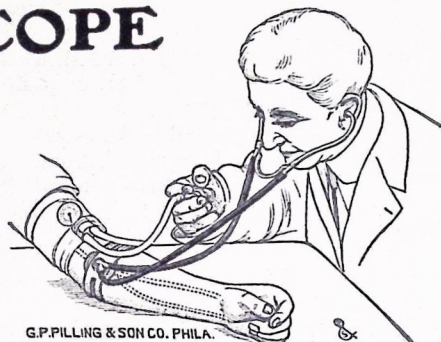
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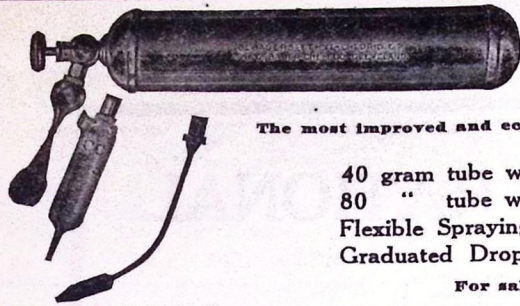
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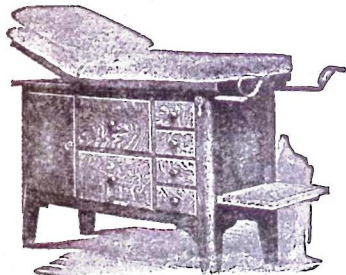
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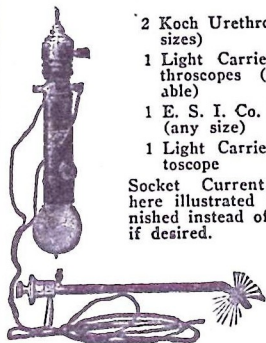
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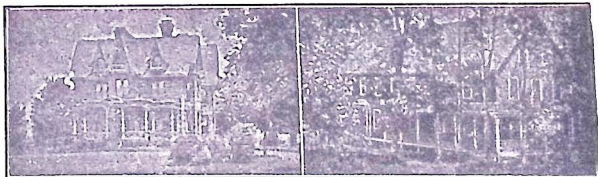
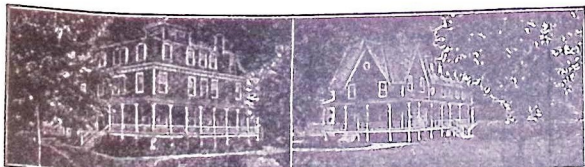
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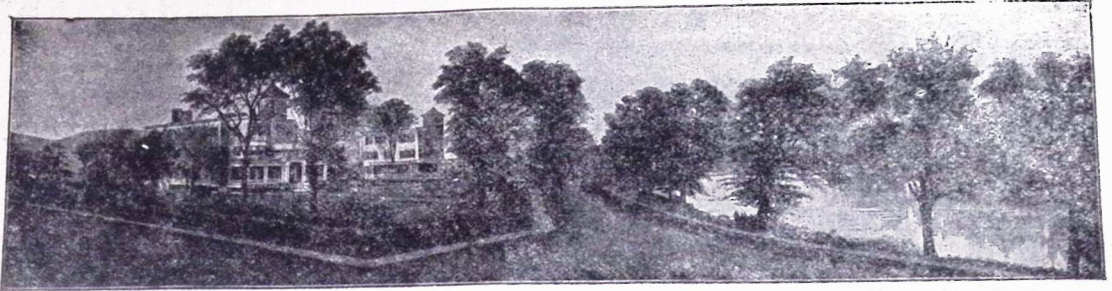


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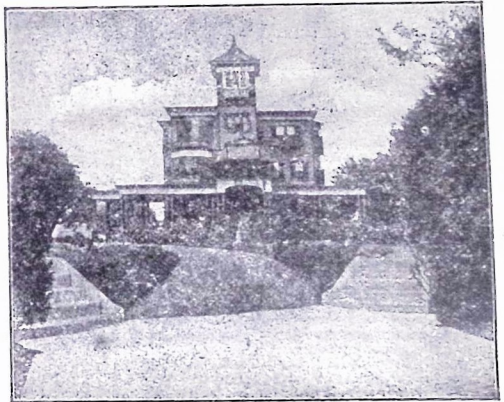
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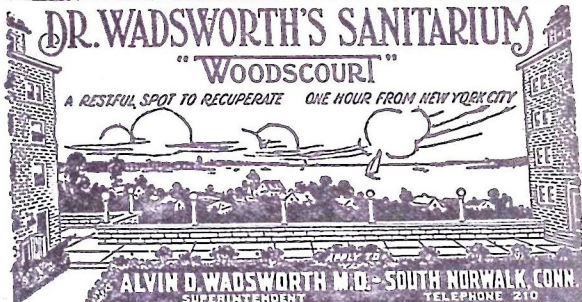
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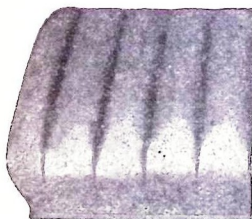
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